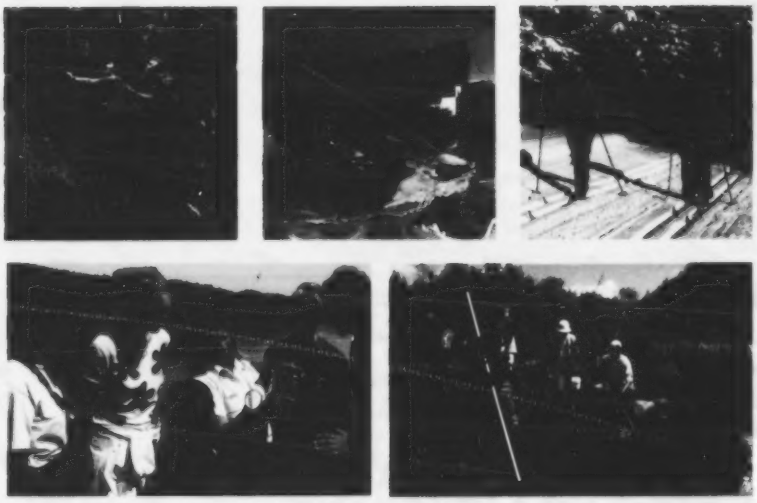
FUNDY

NATIONAL PARK
OF CANADA

Management Plan



Parks Canada Parcs Canada

Canada

NOVEMBER 2005

FUNDY

NATIONAL PARK OF CANADA

Management Plan

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Foreword

Canada's national historic sites, national parks and national marine conservation areas represent the soul of our country. They are a central part of who we are and what we are. They are places of beauty and wonder and heritage. Each tells its own story. Together, they connect Canadians to our roots, to our future and to each other.

We see a future in which each of the national historic sites of Canada, whether federally owned or not, enjoys sound commemorative health, and in which our system of sites evolves as our country evolves. Our national historic sites will be places for all Canadians to experience and learn from. They will help our communities to be vibrant and creative, and contribute to our efforts to revitalize Canada's cities. Together, we will hold these places in trust for this and future generations, while ensuring they contribute to Canada's sustainable economy and environmental health.

Our vision is also for each of Canada's unique terrestrial and marine regions to be represented by at least one national park or national marine conservation area, for all national parks to be in sound ecological health, for all national marine conservation areas to promote the ecologically sustainable use of our marine resources in a way that harmonizes conservation practices with human activities, and for both national parks and national marine conservation areas to be places for all Canadians to experience and enjoy.

These principles form the foundation of the new management plan for Fundy National Park of Canada. May I offer my appreciation to the vast range of thoughtful Canadians who helped develop this plan. I am especially grateful to our very dedicated team from Parks Canada and to all those local organizations and individuals who have demonstrated such good will, hard work, spirit of co-operation and extraordinary sense of stewardship.

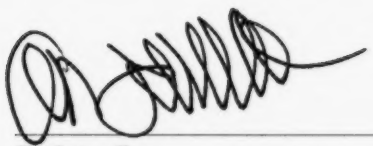
In that same spirit of partnership and responsibility, I am pleased to approve the Fundy National Park of Canada Management Plan.

Stéphane Dion
Minister of the Environment

106-03783/

Recommendations

Recommended by:



Alan Latourelle
Chief Executive Officer
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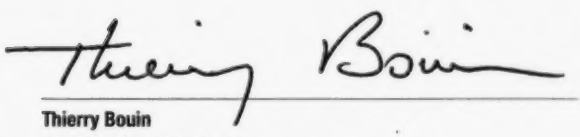


Thierry Bouin
Field Unit Superintendent
New Brunswick South, Parks Canada

Table of Contents

Foreword iii
Recommendation Page v
Executive Summary ix

1.0 Introduction
1.1 The Purpose of the National Park Management Plan 1
1.2 Public Input During the Plan Review 1

2.0 The Role Of Fundy In The Canadian National Park System 3

3.0 The Park Planning Context
3.1 Regional Setting 5
3.2 Trends in Visitor Use at Fundy National Park 8
3.3 Recent Developments in Legislation, Policy and Organization 8

4.0 The Park Vision
4.1 Mission Statement 9
4.2 Vision for the Future 9
4.3 The Park Concept 10

5.0 Maintaining And Restoring Ecological Integrity
5.1 The Park Ecosystem 14
5.2 Ecosystem Management and Collaboration Beyond Park Boundaries 16
5.3 Biological Diversity and Ecological Processes 18
5.4 Ecological Restoration Program 23
5.5 Resource Conservation Through Law Enforcement 24

6.0 The Park Zoning Plan And Wilderness Area Declaration
6.1 Zone I - Special Preservation 26
6.2 Zone II - Wilderness 26
6.3 Zone III - Natural Environment 26
6.4 Zone IV - Outdoor Recreation 27
6.5 Environmentally Sensitive Sites 27
6.6 Wilderness Area Declaration 27

7.0 Cultural Resource Management
7.1 Cultural Resource Inventory and Evaluation 29

8.0 Heritage Presentation And Communication Programs
8.1 External Communications 33
8.2 Orientation and Information 34
8.3 Heritage Presentation and Education 34
8.4 The Co-operating Association and Park Volunteers 37

9.0 The Visitor Experience And Visitor Services
9.1 Access and Circulation 39
9.2 Park Facilities, Services, and Appropriate Park Use 41

10.0 Administration And Operations
10.1 Administration and Operation Facilities 47
10.2 Promoting Environmental Stewardship With Park Operations 48

11.0 Environmental Assessment Summary 51

12.0 List Of Contributors 53

13.0 Bibliography 55

Appendix 1
Summary Of Planned Actions 57

Appendix 2
Revised List Of Environmentally Sensitive Sites 61

Appendix 3
List Of Park Cultural Resources 63

List Of Maps
Map 1: Regional Setting 6
Map 2: Ecoregions and Protected Areas of the Upper Bay of Fundy 6A
Map 3: Greater Fundy Ecosystem 16A
Map 4: Zoning Plan 26A
Map 5: Proposed Wilderness Area 26B
Map 6: Level II Cultural Resources 30A
Map 7: Visitor Facilities and Activities 40A

Executive Summary

This new management plan for Fundy National Park of Canada sets the strategic direction for achieving Parks Canada's mandate of protecting ecological integrity and providing opportunities for visitors to experience, enjoy and understand this important part of Canada's natural and cultural heritage. The plan was developed with public input, and for the next five years it will be the primary public accountability document of Fundy National Park.

The management plan includes a park vision for the future that focuses on maintaining and restoring the ecological health of Fundy National Park, while providing a welcoming, distinctive visitor experience. Ecosystem management, restoration, and scientific research will contribute to a greater understanding of the ecological processes that shape and sustain regional ecosystems. Cooperative research and management activities with adjacent land managers, and with other interested stakeholders, will help to ensure that the park is integrated into an ecologically sustainable working landscape. The park will be recognized as an important ecotourism destination. Sound human use management will minimize the impact of visitor use. Restoration of old, inappropriate facilities will reduce the development footprint in the park. There will be strong public support for the park, as evidenced by the high level of cooperation among all those who have a stake in its future.

Some of the key actions that will be taken during the life of this management plan include:

Ecological Integrity

The first priority of this management plan is the maintenance and restoration of ecological integrity in Fundy National Park. Actions include:

- complete the development of an ecosystem monitoring program, consistent with national standards
- work toward completion of baseline ecological inventories for poorly known groups, including forest fungi, bryophytes, lichens, and terrestrial and aquatic invertebrates
- continue to participate in the recovery of the inner Bay of Fundy Atlantic salmon population
- implement the restoration plan for the golf course segment of Dickson Brook
- close and remove the access road to the former youth hostel, remove the old buildings and restore the site to natural conditions
- establish a declared wilderness area under the provisions of the *Canada National Parks Act* (2000), encompassing the majority of the park's Zone I and Zone II lands
- continue to pursue ecosystem-based management, through participation in cooperative land use planning and management initiatives such as the Greater Fundy Ecosystem Research Group and the Fundy Model Forest.

Cultural Resource Management

Cultural resources that provide evidence of the historical human use and occupation of the land have been identified and designated as Level II resources during this management plan review. Key actions include:

- ensure that all Level II cultural resources are managed in accordance with Parks Canada's cultural resource management policy
- develop and implement a long-term monitoring program for cultural resources

- continue to conduct historical and archaeological research within the park, including oral history research into the Aboriginal history of the Fundy area.

Heritage Presentation and Communications

Heritage presentation and communication programs help to make the park, and its significant values, better known to Canadians. Key actions include:

- integrate ecological integrity messages into communication products so that visitors arrive with the right expectations
- develop a new audio-visual production for the visitor reception centre that presents key park features and messages
- work collaboratively with media, marketing organizations, and the tourism industry to produce a coherent image of Fundy National Park
- enhance the self-directed heritage presentation program through the development of several key interpretive nodes within the park
- invest in new and innovative educational projects that will involve visitors and off-site audiences in learning about ecological integrity and the role of science in park management.

Visitor Use and Services

Canadians and other park visitors will continue to have access to high quality recreational opportunities and services based on national park values. Some adjustments will be made to existing services. Key actions include:

- continue to maintain the primary road system
- continue to maintain a range of high quality camping opportunities
- provide investments to re-capitalize park hiking trails
- develop and implement a strategy to manage Highway 114 as an ecological parkway
- develop a strategy to minimize the cost of maintaining gravel roads
- commission a feasibility study to examine the potential of a limited public transit system within the park
- develop and implement a Human Use Management Strategy that ensures visitors needs are met while minimizing impacts on park ecosystems
- close the Devil's Half Acre trail
- invest in the re-capitalization of the salt water swimming pool
- improve the Butland Lookoff facility to provide a better quality visitor experience
- promote appropriate recreational activities, including mountain biking on existing gravel roads and sea kayaking along the Fundy coast.

Administration and Operations

Parks Canada will continue to operate Fundy National Park in an environmentally and fiscally sustainable manner. Key actions include:

- conduct reviews of staff accommodation needs and office space requirements
- continue to implement the Environmental Management Action Plan
- explore opportunities to reduce energy consumption and greenhouse gas emissions, and explore options for establishing renewable energy demonstration projects.

An environmental assessment of this management plan was conducted to ensure that no significant environmental impacts will result from its implementation. This assessment identified several management plan proposals that will require further, detailed environmental assessments as specific projects are developed. Otherwise, the assessment concluded that implementation of the management plan would not result in long-term negative environmental effects, but rather would contribute to improving the ecological integrity of Fundy National Park.

This management plan, which will be subject to review in five years, seeks to protect for all time the portion of the Maritime Acadian Highlands contained within Fundy National Park of Canada. In achieving this goal, Parks Canada will encourage Canadians and others to experience, understand and appreciate the park's natural and cultural heritage resources in ways that leave them unimpaired for future generations.

1.0 Introduction

1.1 THE PURPOSE OF THE MANAGEMENT PLAN

Parks Canada is responsible for protecting Canada's network of national parks, national marine conservation areas and the national historic sites it administers, for this and future generations. The priority of national park management is on maintaining and restoring ecological integrity, while ensuring that Canadians and other park visitors are provided opportunities to experience, appreciate and understand the natural and cultural heritage of these special places. Accordingly, the primary goals of the park management plan are to set the strategic direction for the maintenance and restoration of ecological integrity in Fundy National Park, to ensure a high quality educational and recreational visitor experience, and to provide guidance for the management of all park operations over the next five to ten years.

The *Canada National Parks Act* (2000) requires each national park to develop management plans with public consultation and to review these plans on a five-year cycle. Approved park management plans are the key accountability documents for national parks. The last management plan for Fundy National Park was tabled in Parliament in 1992. A process was initiated to review this previous management plan. This plan is the product of that planning exercise and is consistent with the most recent direction of the Parks Canada Agency.

The park management plan provides Parks Canada staff with a framework for decision making. It will guide the development of the New Brunswick South Field Unit Business Plan and the park work planning processes. It describes the planning context; identifies new policies; articulates a vision of Fundy National Park ten to fifteen years into the future; and integrates performance indicators for ecosystem management, visitor experience, and education. The plan includes a set of strategic management goals, and outlines management actions that address all key park management functions, including the maintenance and restoration of ecological integrity, heritage presentation, communications and visitor services. All of the actions proposed in the plan are achievable within the existing financial capacity of the New Brunswick South Field Unit.

Ecological integrity is the core concept of national park management plans. An annual implementation report will be prepared to track progress in achieving the objectives outlined in this plan. A State of the Park Report will be prepared in 2009, in advance of the next park management plan review. Subsequent State of the Park reports will be prepared on a five-year cycle.

1.2 PUBLIC INPUT DURING THE PLAN REVIEW

"...ecological integrity has to be the overriding priority when making decisions." (public comment)

The management plan review included a public consultation process that provided residents of local communities, and other Canadians, with an opportunity to share their views on preliminary management proposals. A planning newsletter was produced, and open houses were held. In general, participants reacted favourably and supported the overall management direction in the plan.

Maintaining the ecological integrity of the park and enhancing interpretation programs received wide acceptance. Public comments also reflected enthusiastic support for enhanced interpretation of the cultural resources within the park.

Participants supported Parks Canada's target of consistent, long-term capital investment in heritage protection programs and

the maintenance of park facilities. There was general agreement on trail management proposals. Many people encouraged more ecologically sensitive roadside maintenance practices.

> *"The Park needs to take a more active role in helping people to become more ecologically aware. This is essential to the future of the park." (public comment)*

Participants recognized the need for cooperation between the park and adjacent land owners and managers in order to protect park ecosystems and promote an ecologically sustainable landscape in the region. Some local participants encouraged Parks Canada to strengthen ties with the local business community, the municipality, and the tourism industry. Others recommended more active participation in public environmental education programs.

All of these comments have been considered during the preparation of this management plan and Parks Canada intends to continue seeking guidance from clients and other stakeholders. Specifically, prior to the next management plan review, Parks Canada will engage in the development of a more comprehensive set of vision and performance indicators with the active participation of a multi-stakeholder working group.

2.0 The Role Of Fundy In The Canadian National Park System

The National Parks System Plan provides a framework for park establishment in Canada. The plan is based on a land classification system that divides the country into 39 distinct terrestrial natural regions. One of the goals of Parks Canada is to establish at least one national park in each of these regions. Within this context Fundy National Park protects for all time a representative example of the Maritime Acadian Highlands Natural Region.

Parks Canada is responsible for maintaining and restoring the ecological integrity of national parks. For Fundy National Park, this means protecting the ecosystems, biodiversity and ecological processes that are characteristic of the Maritime Acadian Highlands Natural Region in southern New Brunswick. Landscapes protected in the park include steep-sided river canyons that support mixed coniferous forests of red spruce, hemlock, and balsam fir; rolling uplands supporting mixed-wood forests and tolerant hardwood old growth forests; aquatic habitats in rivers, streams, and several small lakes; exposed rocky headlands; and small estuarine marshes adjacent to the Bay of Fundy. The ecosystems of the park support a diversity of wildlife species, including several species that are at risk or have become uncommon in the region. These species include Atlantic salmon (inner Bay of Fundy population), pileated woodpecker, marten (re-introduced), and peregrine falcon (re-introduced).

Ensuring a high quality visitor experience that provides opportunities for visitors to enjoy, appreciate, and understand the park's natural and cultural heritage in ways that leave it unimpaired for this and future generations is another park management priority. Visitors to Fundy National Park have an opportunity to experience nature and solitude, and participate in a variety of outdoor recreational activities, including both backcountry and frontcountry hiking and camping, ski touring, snowshoeing, and sightseeing. Visitors may also learn about Parks Canada's goals and objectives, Canada's system of national parks, the natural region that Fundy protects, and how human activities affect the natural environment.

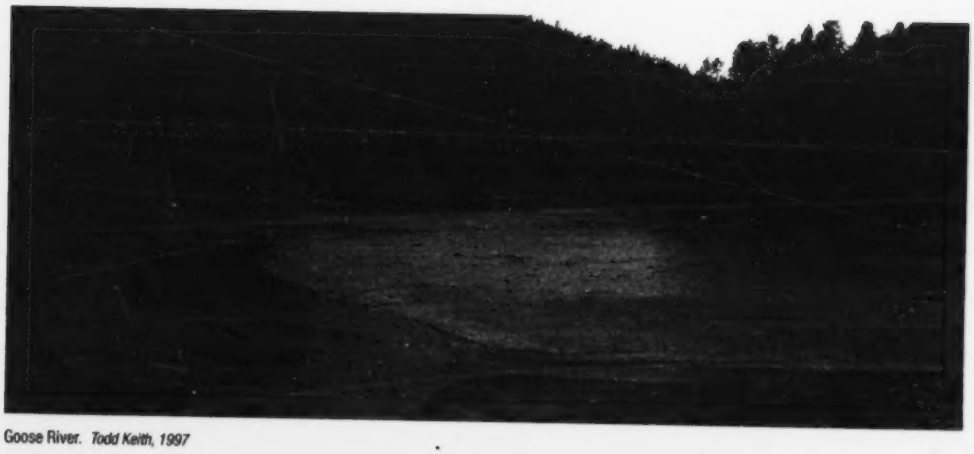
Steep-sided canyon, Broad River. *Todd Keith, 2003*

Protecting and presenting cultural heritage is also an important priority for Fundy National Park. Cultural resources include remnants of early human settlements, the remains of early 20th century logging structures, two recognized heritage buildings, and cultural landscapes.

Rocky coastal headlands along the Bay of Fundy. *Brian Townsend, 2001*

Fundy National Park also serves as an important benchmark for scientific research and monitoring of natural ecosystems, biodiversity, and ecological processes. It provides a relatively undisturbed natural area that can be used to evaluate the impacts of more intensive human use and disturbance occurring in the surrounding landscape. This function is a key component of the park's role as a protected area within the broader landscape.

3.0 The Park Planning Context



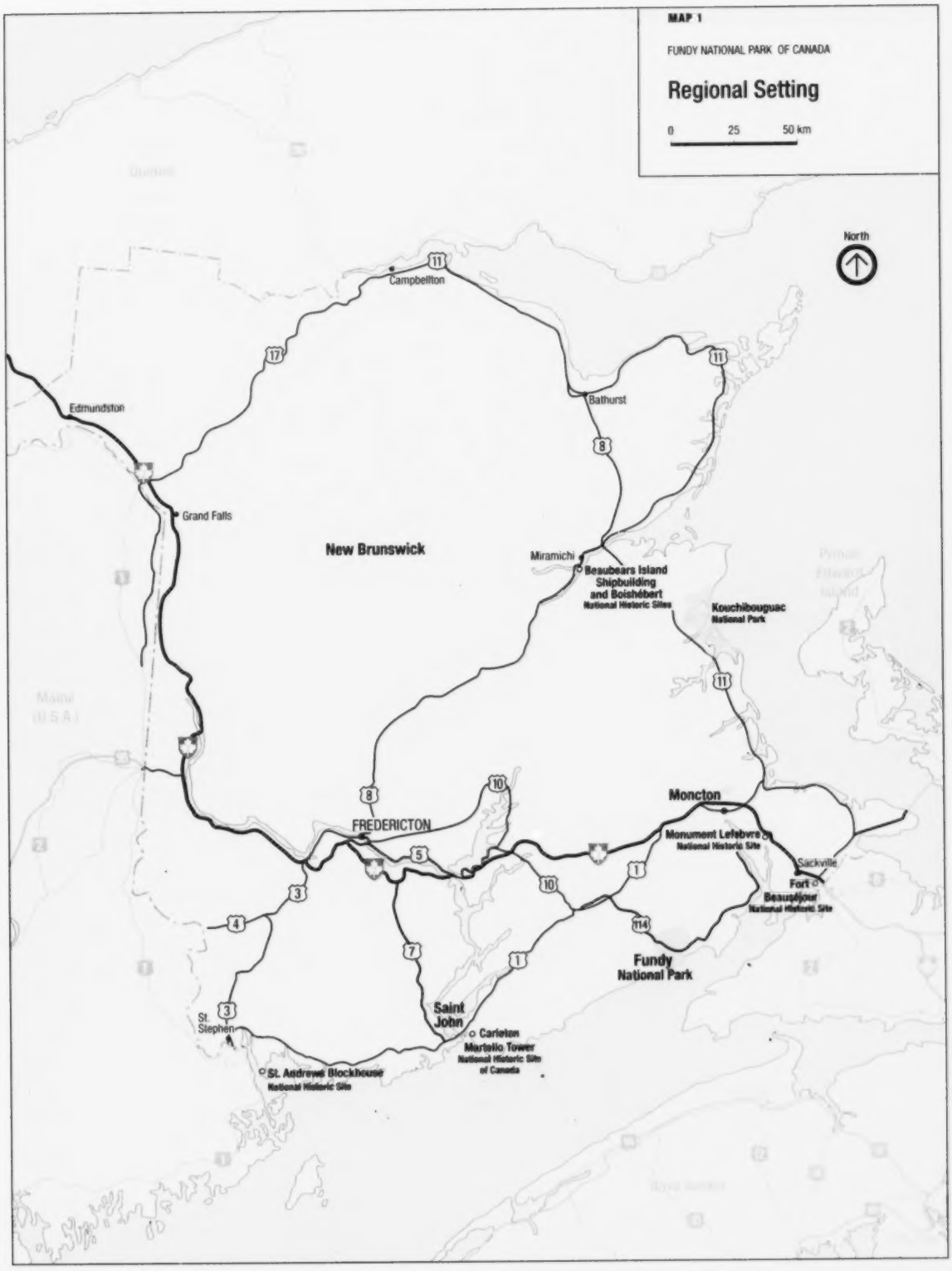
Goose River. *Todd Keith, 1997*

3.1 REGIONAL SETTING

Fundy National Park was established in 1948. It is located in southern New Brunswick, adjacent to the upper Bay of Fundy (See Map 1). The regional economy is based on the principal industries of logging, tourism, farming, and mining. The surrounding area is sparsely populated, with the small community of Alma, situated at the southeastern edge of the park, being the only adjacent settlement. The major population centres of the region include Saint John, Fredericton, Sussex, and Moncton. Highway 114 bisects the park, extending from Wolfe Lake in the northwest to Alma in the southeast, and provides a transportation link to the Trans-Canada Highway near Sussex.

Fundy National Park encompasses 207 km² of rolling uplands and steep ravines, bordered on the south by Chignecto Bay in the upper Bay of Fundy. The park encompasses portions of two ecoregions: the Fundy Coast, and the Southern New Brunswick Uplands (Map 2). The Fundy Coast ecoregion includes gently sloping beaches and tidal flats, sheltered coves, and rugged cliffs rising 150 m from the bay. Within the Southern New Brunswick Uplands the topography rises to nearly 400 m, and steep-sided ravines carved by the Upper Salmon River, Point Wolfe River, Goose River and their tributaries, meander to the coast.

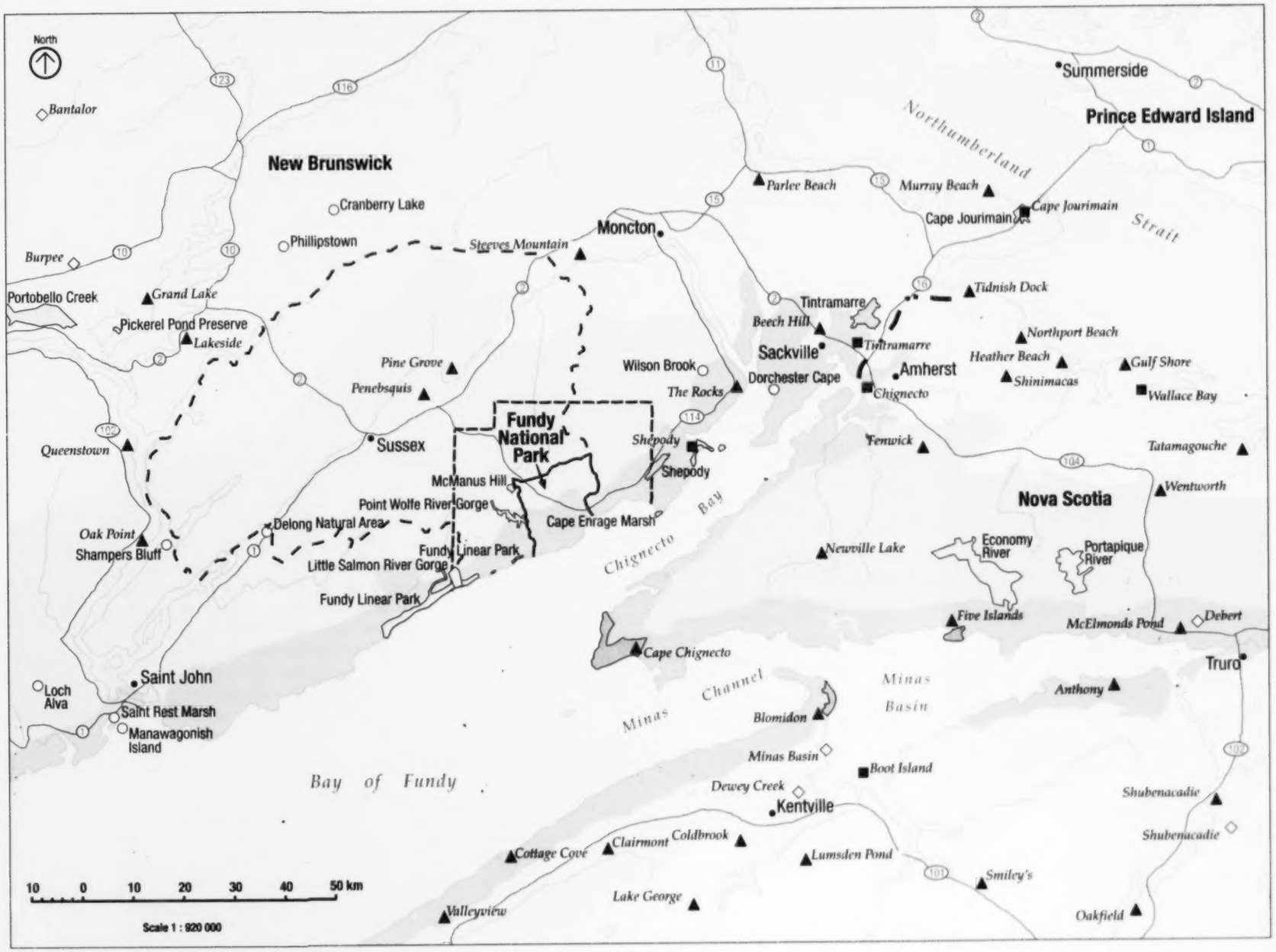
The park protects an assemblage of different forest types. Some forest stands are progressing toward late-successional sequences following extensive logging in the early 20th century. Other areas of the park have experienced successional regression due to population eruptions of spruce budworm in the late 1970s and early 1980s, resulting in large areas of young, regenerating stands. Along the coast, where frequent fog and cool breezes from the Bay influence forest ecosystem development, the dominant tree species are red spruce and balsam fir. On well-drained upland hills and slopes, tolerant hardwood forests of sugar maple, yellow birch, and American beech occur. River valleys support mixed coniferous and deciduous stands, and a few small, poorly-drained sites support black spruce and larch stands. Although the forests have recovered substantially from the effects of logging, the present distribution of


MAP 1
FUNDY NATIONAL PARK OF CANADA
Regional Setting
0 25 50 km
North
Campbellton
Edmundston
Grand Falls
Bathurst
New Brunswick
Miramichi
Beaubears Island Shipbuilding and Boishébert National Historic Sites
Kouchibouguac National Park
Maine (U.S.A.)
FREDERICTON
Moncton
Monument Lefebvre National Historic Site
Sackville
Fort Beauséjour National Historic Site
Fundy National Park
Saint John
Carleton Martello Tower National Historic Site of Canada
St. Stephen
St. Andrews Blockhouse National Historic Site

MAP 2

FUNDY NATIONAL PARK OF CANADA

Ecoregions and Protected Areas of the Upper Bay of Fundy



- Maritime Lowlands
- Fundy Coast
- Southern New Brunswick Uplands
- Nova Scotia Highlands
- Annapolis - Minas Lowlands

- Fundy National Park
- Fundy Model Forest
- Greater Fundy Ecosystem

- National Wildlife Areas
- Wildlife Management Area

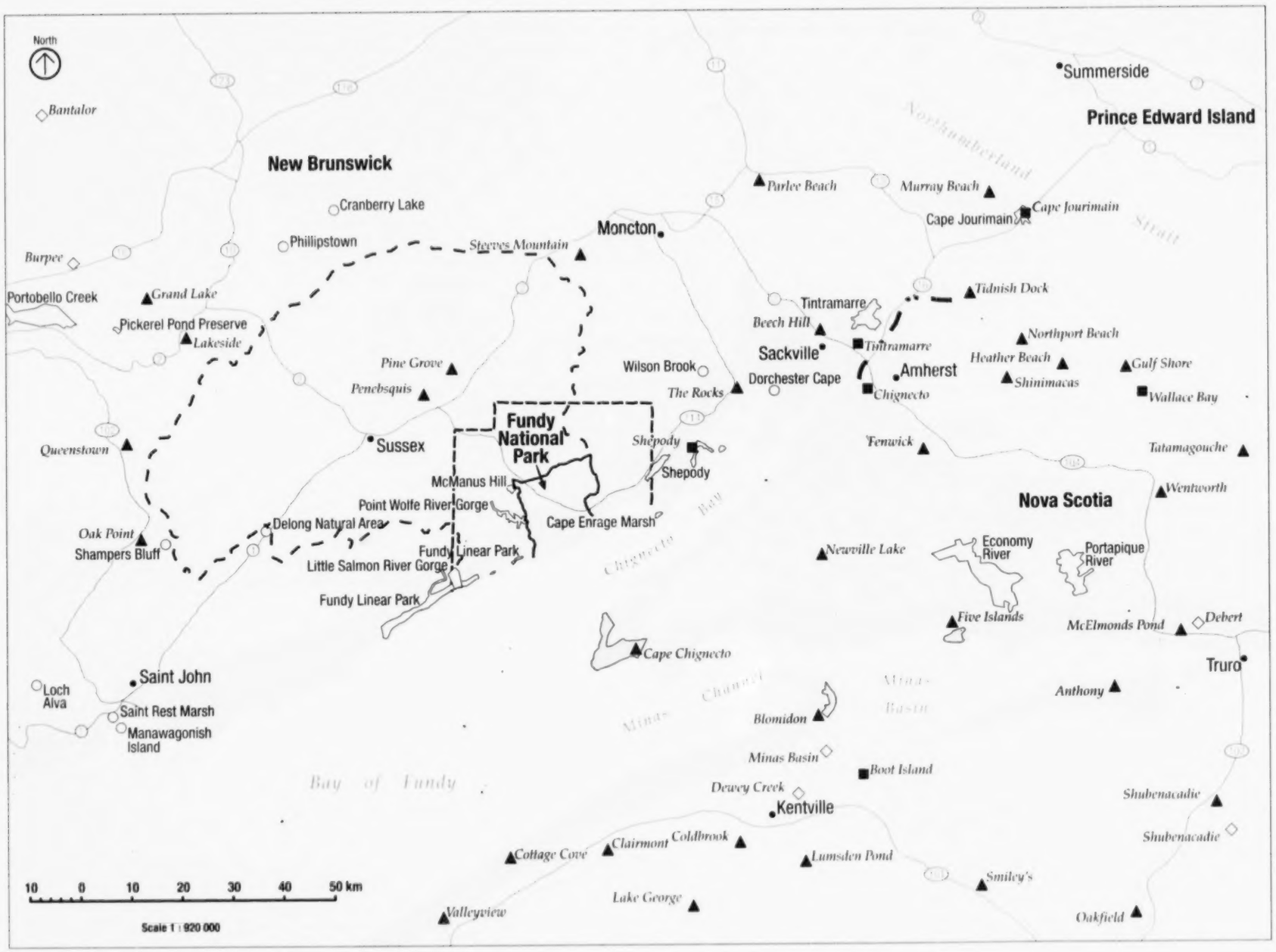
- Provincial Park
- Wilderness Area

- River
- Major Road
- Provincial Boundary

MAP 2

FUNDY NATIONAL PARK OF CANADA

Ecoregions and Protected Areas of the Upper Bay of Fundy



- Maritime Lowlands
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- Fundy National Park
- Fundy Model Forest
- Greater Fundy Ecosystem

- National Wildlife Areas
- Wildlife Management Area

- Provincial Park
- Wilderness Area

- River
- Major Road
- Provincial Boundary

Upper Salmon River. *Jacques Pleau, 2002*

forest types does not yet reflect the predicted natural forest composition for the park.

Fundy National Park is embedded in a regional landscape where industrial forestry operations are the dominant land use. Clearcutting is the primary method of forest harvesting. The conversion of natural mixedwood and hardwood forests to single species conifer plantations has occurred over the last 30 years. Natural disturbances, such as fire and insect defoliation, have been suppressed, further altering the composition and structure of the forests in the region. Tourism and agriculture, including commercial blueberry production near the park boundaries, are also important economic activities in the region.

The park is an anchor for the tourism industry of southern New Brunswick, attracting visitors from regional, national, and international markets. A number of other nearby heritage attractions complement the experience offered by the park. These include the historic lighthouse at Cape Enrage, Hopewell Rocks Provincial Park, the Shepody National Wildlife Area (which includes the Mary's Point Hemispheric Shorebird Reserve), the Sackville Waterfowl Park, the Cape Jourimain Nature Centre, and the Caledonia Gorge Protected Area. West of the park, eleven kilometres of the Fundy Trail Parkway have been completed. This parkway includes a scenic drive, hiking trails and interpretive facilities along the Fundy coast. The Fundy Footpath hiking trail has also been developed in this area.

Current and historic land use, both within and outside the park boundaries, has negatively affected the ecological integrity of Fundy National Park. Changes in tree species composition and forest structure have been accompanied by other ecological changes. Six of 42 native mammal species have either been extirpated, or are at risk of extirpation within the park. Three freshwater fish species, and 20 species of vascular plants have also been lost from the park. Fundy National Park has played an important role in efforts to re-introduce several of these species, including marten, Atlantic salmon, and peregrine falcon. The large scale ecological changes occurring around the park continue to present a challenge to effective biodiversity conservation in the park and surrounding landscape.

Parks Canada participates in regional planning and research initiatives, such as the Greater Fundy Ecosystem Research Group, the Fundy Model Forest, and the Upper Bay of Fundy Biosphere Initiative. Parks Canada also works co-operatively with other federal and provincial government agencies, and local authorities, to ensure that park management efforts are integrated into the context of the surrounding area, and to encourage the application of compatible land management practices on adjacent lands. At the same time, Parks Canada strives to ensure that activities at Fundy National Park have beneficial

Forest harvesting near the park boundary. *Todd Keith, 1997*

ecological, social, and economic effects within the surrounding region.

3.2 TRENDS IN VISITOR USE AT FUNDY NATIONAL PARK

Park visitor data gathered at the campgrounds indicate that 40% of campers are New Brunswick residents, 8% are from Nova Scotia or Prince Edward Island, and 52% are from outside the Maritimes region.

Additional data on summer visitors to the Fundy Coast region in 2001 were compiled by the New Brunswick Government. Some of the trends identified include:

- visitors are very well educated and very sound financially.
- visitors from outside the Maritimes include more adult couples (59%) than families (29%).
- visitors from the Maritimes (excluding New Brunswick residents) include more family groups (67%) than adult couples (24%).

Recent trends suggest that there will be a gradual increase in demand for the visitor experience offered within Fundy National Park. In 2002, park visitation was estimated to be 251,382 person-visits, up approximately 1% from the previous year. Shoulder season visitation is also expected to rise due to an increase in the number of childless couples and single adults visiting the park later in the main visitor season, or during winter.

Visitor characteristics are also changing. On average, visitors to the park increasingly have higher levels of education than in the past, and they seek appropriate opportunities to learn about the natural and cultural heritage of the area. The average age of park visitors is also increasing, consistent with North American demographic trends.

Recent trends in park use include:

- an increase in day trips, especially by regional New Brunswick visitors;
- an increase in the use of the park's front-country recreational facilities; and,
- a relatively stable rate of participation in multi-day trips to the park, which is expected to increase marginally in the near future.

3.3 RECENT DEVELOPMENTS IN LEGISLATION, POLICY AND ORGANIZATION

Since the completion of the previous management plan, Parks Canada has adopted new policies and the Government of Canada has enacted new legislation governing national parks. The most significant statutes and policy documents that affect national park planning and management are:

- the *Parks Canada Guiding Principles and Operational Policies* (1994), which provide the policy framework for all national park management activities;
- the *Parks Canada Agency Act* (1998), which formally establishes Parks Canada as a separate agency of the government;
- the *Canada National Parks Act*, which strengthens the Agency's mandate to maintain and restore ecological integrity within national parks;
- the Parks Canada Action Plan, released in response to the Ecological Integrity Panel Report (2000);
- Engaging Canadians: Parks Canada's Strategy for External Communications (2001), which identifies the fundamental communication and external relations goals of the Agency.

4.0 The Park Vision

4.1 MISSION STATEMENT

Parks Canada's mission at Fundy National Park is: to maintain the ecological integrity of this outstanding part of Canada, an area representative of the Maritime Acadian Highlands Natural Region, by protecting its biological and physical diversity and restoring and maintaining ecological processes; to promote public appreciation, understanding and respect for the park's natural and cultural heritage; to provide memorable visitor experiences; and to contribute positively to the environmental and socio-economic health of the surrounding region.

Bird's eye primrose. *Michael Burzynski, 1981*

4.2 VISION FOR THE FUTURE

The park management plan sets out the long-term direction for Fundy National Park. By implementing the plan, Parks Canada intends to realize the following vision:

For the next ten to fifteen years, the emphasis of park management will be placed on restoring, maintaining, and monitoring the ecological health of Fundy National Park, while providing visitors with a range of meaningful educational and recreational experiences. The existing development footprint within the park will be reduced through ecological restoration efforts. The park will be recognized as a major ecotourism destination by regional, national, and international visitors.

Fundy National Park will continue to protect a diversity of physical features, ecological communities, and species that are representative of the Maritime Acadian Highlands Natural Region. Native species will persist in viable populations that ensure their long-term survival. Natural ecological processes will be better understood and perpetuated to allow continued evolution of the park's ecosystems. Natural disturbance processes such as coastal erosion, wind, population eruptions of native insects, slope failure, flooding, and wildfire will be allowed to proceed where human safety or infrastructure is not threatened.

An active ecosystem management and restoration program, supported by multi-disciplinary scientific research and innovative cooperation with partners, will help to alleviate internal and external ecosystem stresses. These efforts will contribute to an improved state of ecological integrity within Fundy National Park and progress toward an ecologically sustainable landscape within the Greater Fundy Ecosystem. Stronger relationships will be forged with Aboriginal communities in the region and other stakeholders around the park.

Decision making by Parks Canada will be supported by adequate ecological and social knowledge. Where there is uncertainty due to incomplete knowledge, the park will use the precautionary principle in aspects of park management that might affect ecosystem

Visitors participating in a guided learning activity. *Jacques Pleau, 2002*

health. An adaptive management approach will be used to respond to new knowledge gained through research and monitoring.

Fundy National Park will be a leader in heritage presentation and public education in New Brunswick. Park visitors will learn about the complex inter-relationships that support the park's biodiversity and sustain its ecosystems. Presentation programs will encourage greater public understanding of the park, its natural and cultural heritage, the conservation challenges facing the park, the role of national parks in Canada, and the important place of humans in the environment.

Fundy National Park will offer a taste of the wilderness for all Canadians. It will be a place of inspiration, understanding and memorable experiences. All year round, visitors will discover the park's biodiversity, witness the evolution of ecosystems and understand the influence of the Bay of Fundy's dynamic tidal waters. Visitors will learn of a rich cultural heritage rooted in the colonization of the coastline and in the settlement of communities supported by forest harvesting, fishing, shipbuilding, agriculture, and tourism.

A range of high quality facilities and outdoor recreational opportunities will allow visitors to participate in a variety of activities ranging from short, scenic walks, to more demanding overnight wilderness trips. Park facilities will incorporate environmental technologies to reduce energy consumption and greenhouse gas emissions. The park will contribute to the social and economic health of southern New Brunswick, and will continue to be a cornerstone of heritage tourism in Atlantic Canada.

Finally, Fundy National Park will continue to enjoy considerable public support among Canadians as a nationally protected heritage area. The public will see the park as a living expression of our rich Canadian heritage and a symbol of national identity and pride.

4.3 THE PARK CONCEPT

This revised management plan responds to the new directions outlined in Chapter 3, and details how Parks Canada will work toward achieving the vision described above. Over the life of this plan, park management efforts will reflect the following priorities.

Visitors viewing a waterfall. *Brian Townsend*

A. Ecological Integrity is the First Priority

Maintaining or restoring ecological integrity is the primary goal of national park management. This mandate will be a key criterion in decision making. Through a comprehensive ecosystem management program, Parks Canada will strive to mitigate, reduce or eliminate the stressors that are contributing to ecological degradation in the park. Efforts to monitor and mitigate the effects of human use, and to reduce the development footprint[1] within the park, will continue. Completing the GIS analysis of the existing ecological footprint will provide a baseline against which to measure and assess future cumulative impacts.

Additional key ecological issues that will be addressed during the life of this plan are detailed in Chapter 5.

B. A Greater Emphasis on Heritage Presentation

Parks Canada is renewing heritage presentation and public education programs. These activities play an essential role in fostering public understanding of the park's heritage values, and contribute to meaningful visitor experiences. Fundy National Park will support this initiative by enhancing the quality of services and offering a wider range of heritage presentation opportunities throughout the park. Increased emphasis will be placed on the understanding and appreciation of ecological integrity and cultural resource management.

C. Improved Management of Cultural Resources

Parks Canada's Cultural Resource Management Policy provides guidance on the conservation, valuation and presentation of cultural resources within national parks. The cultural resources identified within Fundy National Park will be managed in accordance with this policy. The cultural heritage of the park will be a key component of the heritage presentation program.

D. Providing a Quality Visitor Experience

Since the approval of the last management plan, many park facilities have been recapitalized to bring them up to contemporary standards. The development phase is now completed for Fundy National Park, and park management is shifting toward an emphasis on maintaining ecological integrity and quality visitor services. Parks Canada will continue to provide visitors with an opportunity to experience and learn about the park's natural and cultural heritage through a range of educational and recreational opportunities. Park facilities and visitor services will be reviewed to ensure that they offer compatible, high quality visitor experiences that respond to visitor needs and interests. Some adjustments to the existing facilities and level of service may be implemented in order to renew park programs and maintain quality visitor experiences.

E. Stewardship - A Shared Responsibility

Parks Canada is committed to working with partners beyond park boundaries to promote environmental stewardship and create an ecologically sustainable landscape in the surrounding region. Research and discussion with park neighbours are vital elements of park planning and management. Engaging Canadians in the protection and presentation of heritage resources in national parks is also an important component of the stewardship process.

[1] The development footprint is a concept that describes the extent of disturbance caused by built facilities and associated human use of the environment.

5.0 Maintaining And Restoring Ecological Integrity

> *"Ecological integrity means, with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes."*
> *Canada National Parks Act*

The *Canada National Parks Act* states that, "Maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks". Maintaining the ecological integrity of the park means ensuring that all of the native plants and animals continue to exist in viable populations, and that the natural ecosystem processes that support their habitat requirements continue to function normally. Fundy National Park pursues this mandate by implementing ecosystem-based management and sound environmental stewardship, and by participating in cooperative land use planning initiatives.

Strategic Goal:

To maintain the ecological integrity of a representative example of the Maritime Acadian Highlands natural region by protecting native biological diversity, natural landscapes, ecosystems and ecological processes in Fundy National Park, and by working collaboratively with others beyond park boundaries to promote ecologically sustainable land use in the surrounding region.

Ecological integrity must be central to decision making if this goal is to be achieved. Improved decision making will be aided by increasing the accountability of park managers for ecological integrity. Management decisions that may affect the ecological integrity of the park will be supported by the best available scientific information. When there is uncertainty, park management decisions will respect the precautionary principle.

Ecological integrity will be the primary consideration in the assessment of any capital redevelopment of facilities within the park, including those belonging to both Parks Canada and commercial operators. All capital redevelopment projects will be reviewed in light of criteria defined in the Parks Canada Action Plan.

The sections below describe specific elements of the park's ecosystem management program, and provide objectives, indicators, and targets that will assist the park in measuring success over time. Key elements of the park's 1997 Ecological Integrity Statement and Ecosystem Conservation Plan have been incorporated into this chapter, with revisions that reflect progress, and the decisions made

Fog in the hills along the Upper Salmon River. *Todd Keith, 1997*

during this management planning program. Since the publication of these documents, the status of the inner Bay of Fundy population of Atlantic salmon has been elevated to endangered, and the park has responded by participating in the development of an intensive recovery program. The other main issues identified in 1997 remain the same, although the park has made considerable progress, especially in the area of ecosystem monitoring and restoration.

5.1 THE PARK ECOSYSTEM

5.1.1 Biophysical Context

The National Ecological Framework for Canada identifies two ecological regions within Fundy National Park, the Fundy Coast and the Southern New Brunswick Uplands. The Fundy Coast constitutes a narrow (3-4 km wide) strip along the coastline of the Bay of Fundy and includes approximately 20% of the park area. This region is influenced by the bay and is characterized by cool, wet summers and mild, humid winters. Humidity is high and fog can be frequent in the summer months. Mean annual precipitation is 1,185 mm in the vicinity of Alma, most of it falling as rain. The average frost-free period for the park Headquarters Area is 147 days, and the mean annual temperature is 5.3°C.

Estuaries at the Point Wolfe and Upper Salmon Rivers are inundated twice a day by the Bay of Fundy tides, which average 8.8 m at Fundy National Park. The forest cover in this region is predominantly coniferous. Red spruce is the dominant species, with some remaining trees exceeding 100 years in age and 60 cm in diameter at breast height. Yellow birch, with some very large trees, as well as white birch and balsam fir, also occur in this region. Red spruce and balsam fir are the main components of the understory.

Inland from the Bay of Fundy, the Southern New Brunswick Uplands ecological region encompasses the remaining 80% of the park area. This region is marked by warmer summers, colder winters, and greater snow accumulation than the Fundy coast. Mean annual precipitation at Wolfe Lake is 1,210 mm. With a mean annual temperature of 3.8°C, the uplands experience 102 frost free-days. This region has a mixed forest cover composed of sugar maple-yellow birch and red spruce-balsam fir dominated stands.

Deep snow and cabin. *Parks Canada*

The existing forest has trees of a variety of age classes. Older trees, such as sugar maple and yellow birch, can be very large. The understory is patchy, containing beech, birch, and balsam fir. In both regions, the natural population eruptions of the spruce budworm that occurred in the late-1970s and early 1980s have left behind numerous small clearings, snags and fallen logs.

5.1.2 Land Use History

The park area has an extensive history of human use, dating to the early 1800s. Several small communities were located in the park prior to its establishment. Vestiges of these settlements remain in the form of old foundations and regenerating fields. Most of the forest in Fundy National Park has been cut in the past, and a number of dams were constructed to permit log driving and to provide power for saw mills. Areas were flooded on the East Branch, Point Wolfe and Upper Salmon rivers. Dams at Bennett and Wolfe lakes modified the surrounding landscape and continue to restrict the movement of resident fish populations. Numerous pools were modified and river beds and hydrology

Old farm fields, Butland Lookoff. *Brian Townsend*

were altered through log driving activities. Lumber mills were constructed at the mouth of the Point Wolfe and Upper Salmon Rivers and were active in the 1800s and early 1900s. In addition, several portable mills operated in the interior in the early 1900s.

Areas immediately adjacent to the mills were so extensively logged that at one point, accessible stands of red spruce were almost entirely depleted in the Point Wolfe area. The crash of the lumber markets in 1921, followed by the establishment of Fundy National Park in 1948, concluded this phase of logging and river log driving in the area. Today, while native plant communities have been reestablished in much of the park and natural successional stages are present, evidence of these historical activities persists.

The landscape surrounding the park is highly fragmented, due to past and present forest harvesting practices. Extensive clear-cutting has reached all of the park's three forested boundaries, and associated effects can be observed well within the park interior. A network of forest access roads has been created to facilitate forest harvesting. These roads are kept open to the general public and contribute to increased hunting pressure in the vicinity of the park.

The Point Wolfe and Upper Salmon River watersheds extend beyond park boundaries to areas of widespread, intensive timber harvesting. Peripheral land use practices, such as mechanized logging and aerial insecticide spraying for forest insect control, will continue to affect water quality and the hydrological regime within Fundy National Park. Extensive clear cuts and subsequent replanting with single species tree plantations could be limiting transboundary movements of wildlife.

5.1.3 Major Stressors Affecting the Park

A number of local, regional, and global stressors continue to affect the ecological integrity of Fundy National Park. Parks Canada will continue to work toward addressing these stressors and mitigating their impacts over the life of this management plan. The top five stressors, as reported in the State of Protected Heritage Areas 1999 Report, are:

- Forestry - Intensive forestry activities surrounding the park have increased fragmentation and decreased habitat connectivity. The park has effectively become a habitat patch. The extensive network of forestry roads, some leading up to the park boundary, contribute to the problem, and increase access and hunting pressure on ungulates, black bears, and fish. Existing harvesting activities may also affect aquatic ecosystems within the park.
- Urbanization - Increasing development within the surrounding region increases habitat fragmentation.
- Visitor and Tourism Facilities - Tourism facilities and associated visitor use can negatively affect ecological integrity, both inside and outside of the park.

- Utility corridors - Linear utility corridors contribute to the cumulative impact of fragmentation, both inside and outside the park.
- Sport fishing - Fish harvesting has contributed to the declining health of fish populations. Low population numbers, decreased genetic diversity in brook trout, and potential impacts on endangered Atlantic salmon led the park to prohibit fishing within all areas of Fundy National Park except Bennett Lake.

Some additional key stressors that have been identified through ongoing ecological research include:

- Road Maintenance Practices - Maintenance activities may disturb animals, streams and lakes within the park, and contribute to the introduction of non-native species.
- Historical Forestry Practices - Log driving has altered hydrology, river beds and aquatic habitats. Dams and culverts continue to restrict the movement of some fish populations.
- Airborne Pollution - Substances originating outside the park may have an impact on forests and water quality inside the park. Acid precipitation, global climate change, and aerial insecticide applications are of particular concern.
- Invasive Species - Several potentially damaging invasive species, which may be capable of displacing native species, have recently been recorded in the park.

5.2 ECOSYSTEM MANAGEMENT AND COLLABORATION BEYOND PARK BOUNDARIES

Fundy National Park is not large enough to sustain the full range of native biodiversity and ecological processes characteristic of the Maritime Acadian Highlands Natural Region. As illustrated on Map 3, Fundy National Park has become an ecological island, effectively disconnected from other conservation areas and natural habitats by landscape conversion, roads, and other developments. This fragmentation may make it difficult for species to maintain their natural movements and gene flow across the landscape. These external changes also exert stress on ecosystems, wildlife, and ecological processes within park boundaries.

In order to address these concerns, Fundy National Park participates in discussion, research, and cooperative ecosystem-based management initiatives aimed at advancing broader landscape conservation in the region. These include involvement in the Greater Fundy Ecosystem Research Group, the Fundy Model Forest, the Upper Bay of Fundy Biosphere Initiative, and the Bay of Fundy Ecosystem Partnership. These activities are intended to establish linkages between the park and the surrounding landscape, and to lessen the ecological impact of human activities on the Fundy region by promoting ecologically sound land use practices. Establishing ecological connectivity between existing and proposed conservation areas and other natural habitat patches around the Bay of Fundy is an important long-term goal. Over time, these initiatives have become effective forums for cooperation between Parks Canada, researchers, land owners, industry, community representatives, and other levels of government. In addition to these existing efforts, Parks Canada will seek opportunities to develop stronger relationships with Aboriginal communities in southern New Brunswick.

The cooperative initiatives in which the park currently participates are described further below.

5.2.1 The Greater Fundy Ecosystem Research Group

In 1991 Parks Canada helped launch the Greater Fundy Ecosystem Research Project to develop the scientific basis for ecologically sustainable management of the region surrounding and including Fundy National Park. A Research Group was formed for the purpose of designing "a sustainable landscape that permits the maintenance of ecological integrity while sustaining the economic vitality of the area." This project links the national park with the adjacent landscape and brings together scientists and land managers involved in research, park management and land use planning in the region.

MAP 3

FUNDY NATIONAL PARK OF CANADA

GREATER FUNDY ECOSYSTEM

Boundaries

Fundy National Park

Greater Fundy Ecosystem Intensive Study Area

Roads

Highway 114

Graded and Logging

Watersheds of the Park

Goose River

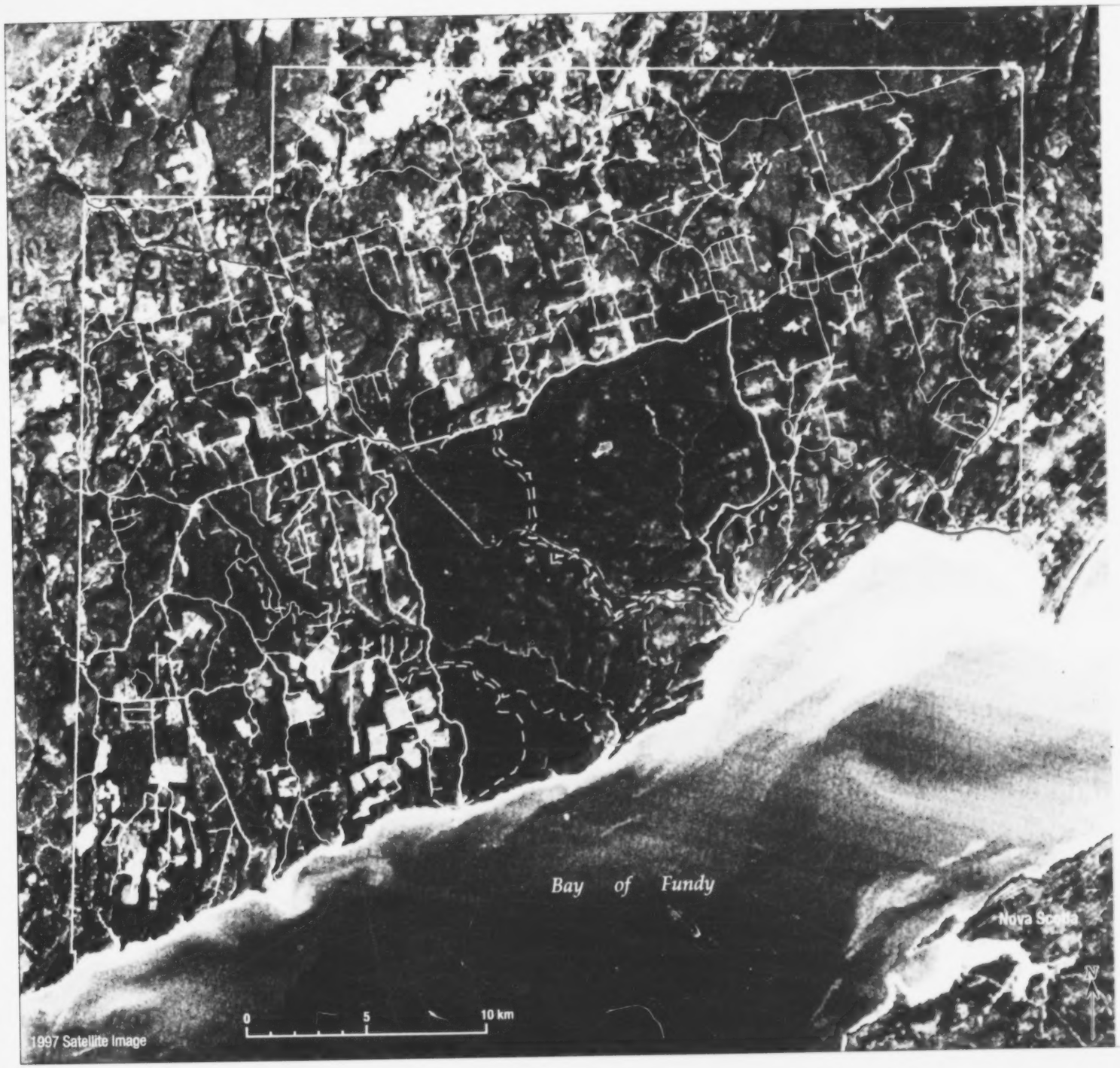
Point Wolfe River

Upper Salmon River

MAP 3

FUNDY NATIONAL PARK OF CANADA

GREATER FUNDY ECOSYSTEM



Boundaries

Fundy National Park

Greater Fundy Ecosystem
Intensive Study Area

Roads

Highway 114

Graded and Logging

Watersheds of the Park

Goose River

Point Wolfe River

Upper Salmon River

Aquatic invertebrate research. *Brian Townsend, 1999*

Although the boundary of the greater ecosystem varies depending on the ecological parameters being considered, the Greater Fundy Ecosystem Research Project has focussed on a 1,050 km² area that includes Fundy National Park. Many of the park's most significant features, such as the Upper Salmon River and Point Wolfe River watersheds, extend well beyond the boundaries into this surrounding landscape (Map 3).

The comprehensive research program has revealed that significant ecological changes have occurred in the greater ecosystem. Atlantic salmon have nearly disappeared from the rivers. The abundance of old forest communities has been diminished, and biological diversity has been reduced. The remaining forest communities are highly fragmented by forest roads, clearcuts and plantations, and the structure and composition of many regenerating forests does not reflect natural successional patterns. Research results indicate that the landscape is not being managed on an ecologically sustainable basis.

> *"Research has shown the Greater Fundy Ecosystem to be heavily impacted, with a demonstrated loss of ecological integrity …*
> *We conclude that the landscape is currently not being managed on an ecologically sustainable basis."*
>
> S. Woodley, G. Forbes and A. Skibicki. 1998. State of the Greater Fundy Ecosystem. Greater Fundy Ecosystem Research Group. (p. 187-189).

The results of research conducted by the Greater Fundy Ecosystem Research Group have been communicated through a series of scientific papers and publications. These include the State of the Greater Fundy Ecosystem (1998), and the Forest Management Guidelines to Protect Native Biodiversity in the Fundy Model Forest (2005).

5.2.2 The Fundy Model Forest Initiative

Parks Canada is also an active participant in the Fundy Model Forest. Within the model forest, the park plays an important role as a protected area, a relatively undisturbed benchmark for scientific research and a focal point for public education. The Fundy Model Forest initiative provides an opportunity to cooperatively address key ecosystem management issues with adjacent landowners and to communicate national park values and issues to members of the surrounding community. As a partner in the Fundy Model Forest, Parks Canada has contributed to improved forest management in the area surrounding the park.

The partners in the Fundy Model Forest support the ecological research agenda of the Greater Fundy Ecosystem Research Group. Research results will be used to develop a management plan for the model forest. A Report on the Status of Local Level Indicators has recently been produced by the Fundy Model Forest. This report may form the baseline for future State of the Forest Reports for the Fundy Model Forest.

5.2.3 The Upper Bay of Fundy Biosphere Initiative

Parks Canada has joined an initiative to nominate portions of the Upper Bay of Fundy in New Brunswick to the United Nations Educational and Scientific Organization (UNESCO) for consideration as a UNESCO Biosphere Reserve. If accepted, the new biosphere area would provide a community-based forum for discussing ecosystem management in the region.

5.2.4 The Bay of Fundy Ecosystem Partnership

The Bay of Fundy Ecosystem Partnership was created in 1997 to encourage communication and cooperation among all stakeholders within the Bay of Fundy coastal zone. Its objective is to foster conservation and management of the resources and habitats within the bay by disseminating information, monitoring the state of the ecosystem

and encouraging co-operative activities. Multi-disciplinary research groups undertake research, conservation activities and monitoring programs. Fundy National Park's participation in this initiative allows park staff to maintain contact with ongoing research and monitoring efforts in the marine and coastal environments adjacent to the park.

5.2.5 Aboriginal Partnerships

Fundy National Park has recently collaborated with the Fort Folly First Nation on an Atlantic salmon recovery program. The Fundy Model Forest, whose partners include the Eel Ground First Nation, provides another opportunity for Parks Canada to cooperate with Aboriginal people on issues of mutual interest within the Greater Fundy Ecosystem. Fundy National Park is interested in developing stronger relationships with Aboriginal people in southern New Brunswick, and will work toward this goal over the life of this management plan.

Objective:

To maintain and strengthen partnerships for ecological integrity by supporting cooperative initiatives that promote an ecologically sustainable landscape in the Greater Fundy Ecosystem. Parks Canada's success at achieving many of the subsequent targets in this management plan will be dependent on the efficacy of these partnerships.

Indicators:

- Active participation in cooperative initiatives.
- Degree to which products such as the Forest Management Guidelines to Protect Native Biodiversity in the Fundy Model Forest are adopted and implemented by forest harvest companies, private woodlot owners, and adjacent land use managers.

Targets:

- By 2008, Fundy National Park will be an active and contributing partner to the following partnership initiatives: the Greater Fundy Ecosystem Research Group, the Fundy Model Forest, the Fundy Biosphere Initiative, and the Bay of Fundy Ecosystem Partnership.
- By 2008, 60% of private woodlot owners and all of the major forest companies within the Fundy Model Forest area, as surveyed by the Greater Fundy Ecosystem Research Group, will have accepted and implemented aspects of the Forest Management Guidelines to Protect Native Biodiversity in the Fundy Model Forest.

Management Actions for Ecosystem Management and Collaboration:

- Continue to promote, support and participate in the Greater Fundy Ecosystem Research Group and a comprehensive scientific research program addressing biodiversity and multi-scale sustainable land management issues.
- Explore the feasibility of establishing an Aboriginal advisory group to act as a liaison between First Nations and Parks Canada regarding park management, heritage and culture, and other opportunities in the national park and historic sites within the field unit.
- Work with partners to maintain and enhance ecosystem monitoring activities in the Greater Fundy Ecosystem and encourage periodic reporting on the state of the greater ecosystem.
- Work toward broader landscape conservation in the region by supporting initiatives to establish additional protected areas in the region and encouraging research and development of connectivity corridors in the Atlantic Maritime Ecozone

5.3 BIOLOGICAL DIVERSITY AND ECOLOGICAL PROCESSES

Maintaining biodiversity and ecological processes is the key to maintaining ecological integrity. Accordingly, Parks Canada must strive to ensure that native species are present at viable population levels, and that natural ecological processes and cycles, such as spruce budworm population eruptions, fire, herbivory, and predation, are allowed to continue in the park. Over the life of this management plan, Fundy National Park will focus on the following biodiversity issues.

Peregrine falcon. *Parks Canada*

Ecological Inventory and Research

The first step to maintaining biodiveristy is to know what species exist within the park ecosystem and to better understand their ecological role. While the park has a good database on most of the macro flora and fauna, these species represent only about 5% of Acadian forest species. The remaining groups such as fungi and soil invertebrates are poorly inventoried.

Objective:

To improve understanding of the park's biodiversity and the ecological role of key species.

Indicator:

- Percentage of species represented in the park database.

Targets:

- By 2008, the park will initiate biological inventories to improve its understanding of fungi, mosses, lichens and liverworts, as well as soil and aquatic invertebrates.

Habitat Fragmentation

Fragmentation has been called the greatest worldwide threat to forest wildlife, and has been implicated in the State of Protected Heritage Areas 1999 Report as one of the main stressors affecting Fundy National Park. The greater Fundy area has been used extensively for over 150 years, mainly for lumber harvesting, fishing and farming. The resulting cleared areas have created a highly fragmented landscape that threatens the ecological integrity of the region. A fragmentation analysis conducted in 1993 will be used as a baseline to monitor recent and future changes on the surrounding landscape.

Achieving the restoration of ecological connections will require the cooperation of adjacent landowners and other partners. Fundy National Park will continue to work with adjacent landowners, through the forums discussed above, to promote landscape management practices that are sensitive to the ecological needs of the park. Parks Canada will also ensure additional habitat protection by completing the gazetting process to incorporate into the national park a 100-hectare parcel of Crown land adjacent to the west entrance.

Inside and outside the park, culverts, erosion control structures, tidal barriers and dams may be impeding movement of fish populations. Management action may also be required to restore these important aquatic corridors.

Objective:

To maintain or restore regional ecological connections to permit species dispersal and movement between areas of critical habitat and allow gene flow between populations.

Indicators:

- The degree of connectivity and conductivity between the park and the Greater Fundy Ecosystem Area, based on geomatic techniques and conservation biology principles.
- The populations of indicator species.

Targets:

- By 2008, an updated landscape change analysis using geomatic techniques and remotely sensed data, carried out in partnership with the Greater Fundy Ecosystem Research Group and the Fundy Model Forest shows no increase in fragmentation levels above the 1993 baseline.
- By 2008, Population Viability Models (PVAs) coupled to forest harvest forecasts for the Greater Fundy Ecosystem show a 100% probability of persistence (i.e. 0% extinction risk) for 100 years for the indicator species of marten, pileated woodpecker, northern flying squirrel, white-breasted nuthatch and blackburnian warbler.

Species at Risk

Fundy National Park includes the range of a number of federally and provincially listed species at risk or species of concern. Peregrine falcon and marten are two species that have been reintroduced into Fundy National Park. An evaluation of the success of these programs and requirements for future action is ongoing. Efforts to address, and reverse, the decline of species at risk require collaboration with local and regional partners.

The Inner Bay of Fundy population of Atlantic salmon *(Salmo salar)* was listed as endangered by COSEWIC in May 2001. This population, which inhabited 32 major river systems within the upper Bay of Fundy, including the Point Wolfe and Upper Salmon rivers in Fundy National Park, has declined 90% or more in abundance since 1989 and is at imminent risk of extinction in the wild. Since 2001, Fundy National Park has participated in the National Recovery Strategy for this population and has initiated an ambitious recovery program with particular focus on the remnant population in the Upper Salmon River. After an initial two-year period of intensive assessment and population monitoring, the park recovery program has now entered an innovative phase of gene banking, captive rearing and breeding, and reintroduction of various life stages. Following the best-known principles of conservation biology, the program is being managed adaptively from year to year using feedback from the genetic monitoring program. Partners in this program include the Fort Folly First Nation, the Department of Fisheries and Oceans, and the Atlantic Salmon Federation.

Marten. *Brian Townsend*

Atlantic Salmon. *Parks Canada*

Arethusa bulbosa, an orchid that was once found in the bog at Caribou Plain, is now believed to be extirpated from the park, perhaps due to its past location adjacent to a trail. This species is a potential candidate for reintroduction.

Objective:

To restore populations of native species that are at risk, or are of conservation concern.

Indicators:

- Meta-populations of provincially and federally listed species at risk, or species of conservation concern.

Targets:

Within the Greater Fundy Ecosystem, meta-populations of the following three species will exist at numbers equal to or greater than the minimum effective viable population.

- **Endangered Inner Bay of Fundy salmon:** By 2010, the Point Wolfe and Upper Salmon Rivers will have a population of between 300 and 475 spawning individuals entering each river annually. This number assumes reversal of present causes of regional population decline.

- **Marten:**
  Based on an annual mortality of less than 5%, Fundy National Park will have a population of 50 marten by 2008, and a minimum effective population of 250 in the Greater Fundy Ecosystem by 2025.
- **Peregrine falcon:**
  By 2006, there will be a minimum of 18 nesting pairs in Ecozone 1 identified in the National Recovery Plan for the *anatum* subspecies, including 11 to 13 in the Bay of Fundy with an average fledgling success of 2.14/nest.

Invasive Species

After habitat loss and fragmentation, introduced species are the second greatest threat to native biodiversity. Over 150 exotic species have been recorded for the Greater Fundy Ecosystem area, including three mammals, three breeding birds, 134 vascular plants and 15 Lepidoptera. In the last five years, purple loosestrife and the Eurasian watermilfoil, both highly invasive threats to aquatic ecosystems, have been identified in the park. Rainbow trout have also been found recently in the Upper Salmon River and represent an additive stress on the endangered population of Inner Bay of Fundy Atlantic Salmon. The park will carry out an inventory of non-native species, assess their degree of invasiveness and threat to native species, including future invasiveness modelling under climate change scenarios and, where feasible, attempt to mitigate the effects of these species on natural systems.

Objective:

To identify threats posed by non-native invasive species, develop a plan to mitigate their impact on park ecosystems, and prevent new introductions.

Indicator:

- Completed assessment of potentially invasive species, and action plan.

Target:

- An assessment and action plan will be completed by 2007.

Ecosystem Disturbance and Succession

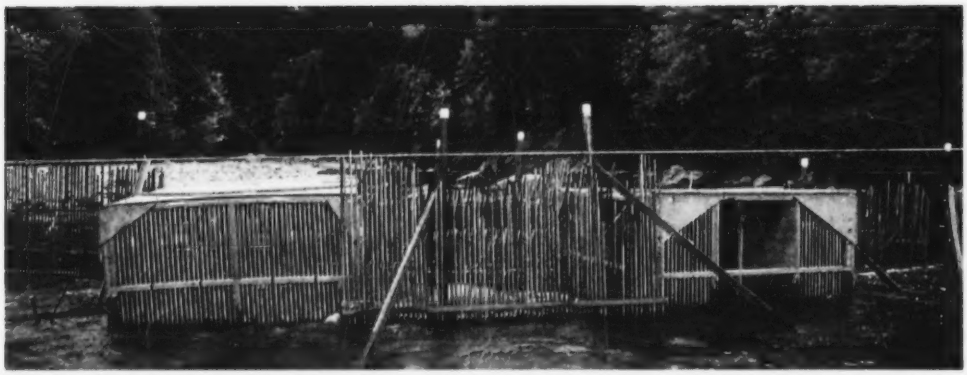
Most of the forest ecosystem in the park is driven by a gap replacing strategy, where small openings are created in the forest canopy when large, old trees die, or trees are toppled by wind or slope failure. This pattern is mediated on the large scale by periodic episodes of insect-generated stand mortality, primarily caused by spruce budworm population cycles. Fire and large-scale wind events are lesser, but still important, disturbance agents. Evidence of fire is most noticeable in areas away from the coast, but has been detected in many areas of the park during recent ecosystem archaeology research that explores historic and prehistoric ecological conditions and processes by examining evidence preserved in soils.

Budworm population eruptions appear to be increasing in both intensity and frequency. Return times have decreased from a range of 42-75 years to 19-34 years. The next population increase of spruce budworm will likely begin over the course of this management plan. While these natural population eruptions will be allowed to proceed unencumbered inside the park, attempts to control these cycles just beyond the park boundary may adversely affect natural succession patterns within the park. Wherever possible, an effort must be made to maintain natural disturbance regimes that appear to be dominant shaping forces in the Greater Fundy Ecosystem.

The other main disturbance element in the Greater Fundy Ecosystem area is forest harvest. Within the last 25 years, over 30% of the entire ecosystem has been harvested or otherwise disturbed for forestry roads and other harvesting associated features. This represents a disturbance cycle of 66 years, compared to a historical cycle predicted to be four to five times as long. In contrast to changes outside the park boundary, old farm fields in the park are being re-colonized by native plant communities.

Objective:

To maintain, and restore where necessary, natural disturbance regimes and successional sequences.



Fish counting fence, Upper Salmon River. *Parks Canada*

Indicator:

- Forest disturbance and succession regime as measured by the forest cover mosaic.

Targets:

- By 2008, the expected trend in the spruce budworm cycle is known, and a proactive management plan, which includes public consultation, is in place.
- By 2015, the actual forest cover of the park will be within 20% of the predicted potential forest cover (i.e., Stand Ages and Species Composition).
- By 2008, the park will have carried out additional research on the past and present role of fire in the park, through ongoing research projects such as ecosystem archaeology. This research will support the development of a fire management plan.

Ecological Monitoring

In order for Parks Canada to fulfil its goal of protecting, maintaining and, where possible, restoring the ecological integrity of Fundy, a targeted ecological integrity monitoring program must be established. Fundy National Park is in the process of updating its monitoring program as part of a Parks Canada bioregional approach to ensure that it has the capacity to detect changes in biodiversity, ecosystem structure and function, and ecosystem stressors. Standard protocols for conducting field monitoring activities and storing and managing collected data will also be established. Monitoring results will allow the park to accurately report on the health of the park ecosystem, and may also be used to improve ecosystem and human use management and modify heritage protection and presentation programs.

Parks Canada and partners are already carrying out a monitoring program in and around the park that includes fish populations, plant species richness and endangered species. Monitoring protocols have been developed for some mammals, avifauna, amphibians, acid precipitation, ground level ozone and climatic conditions.

Objective:

To complete the development of a comprehensive ecological monitoring program to track changes and report on trends in park ecosystems.

Indicator:

- A functional ecological integrity monitoring program consistent with the national bioregional approach.

Ecosystem archaeology research. *Brian Townsend, 2001*

Ecosystem monitoring-bird banding. *Brian Townsend*

Target:

- By 2008, the park monitoring program will be focussed on 6-8 key indicators as part of the bioregional monitoring approach. Initial monitoring results will be used in the preparation of the State of the Park Report.

Management Actions for Biodiversity and Ecological Processes:

- Initiate biological inventories to improve understanding of fungi, mosses, lichens and liverworts, as well as soil and aquatic invertebrates.
- Continue to participate in the recovery program for endangered Inner Bay of Fundy salmon, including ecosystem level research (e.g., stable isotope food web analysis), gene banking, captive rearing and breeding, and reintroduction of various life stages.
- Complete a landscape change analysis, in partnership with the Greater Fundy Ecosystem Research Group and the Fundy Model Forest.
- Complete the gazetting process for the 100-hectare parcel of land at the west entrance of the park.
- Complete the development of population viability analyses for selected indicator species.
- Develop an invasive species assessment and action plan coupled with climate change modelling.
- Continue ecosystem succession research on the role of defoliating insects and fire (e.g. ecosystem archaeology)
- Prepare a fire management plan, based on fire history research, specifying the conditions under which forest fires will be allowed to burn without intervention.
- Develop an ecosystem monitoring program that will evaluate progress toward achieving the stated targets.

5.4 ECOLOGICAL RESTORATION PROGRAM

The 1997 Ecosystem Conservation Plan discussed ten main restoration needs in the park, ranging from adjustments to mowing practices to the removal and restoration of old roads. Since that time, the restoration of a closed section of the Laverty Road has been successfully completed, and a five-year naturalization project in frontcountry areas has been initiated.

The park will continue to implement an ecosystem restoration program that will reduce the in-park ecological footprint of its facilities and services. Facilities that are deemed to be inappropriate, or are no longer required for park purposes, will be decommissioned and the areas restored.

Objective:

To reduce the development footprint in the park through restoration of disturbed areas and adjustments in park facilities.

Indicator:

- The number of units of disturbed habitat restored.

Vegetation recovery on the former Laverty Road. *Todd Keith, 2003*

Restoration of Dickson Brook on the Golf Course. *Parks Canada*

Targets:

- By 2009, all 1200 metres of the golf course portion of Dickson Brook will have been restored, as detailed in the comprehensive restoration plan.
- By 2008, five hectares of decommissioned roads, campground, and facilities, including the former youth hostel site, will be restored to an early successional stage.
- By 2008, ten fish passage problems created by poor culvert design and placement will be rectified.
- By 2008, 100% of facilities and all new road work will use native species in their vegetation management plans.

Management Actions for Ecological Restoration:

- Implement the restoration plan for the golf course segment of Dickson Brook.
- Develop and implement a restoration plan for the former hostel site and access road.
- Implement additional restoration projects as resources permit. Priority projects include the restoration of the Caribou Plain bog and restoration projects related to the recovery of Inner Bay of Fundy Atlantic salmon populations

5.5 RESOURCE CONSERVATION THROUGH LAW ENFORCEMENT

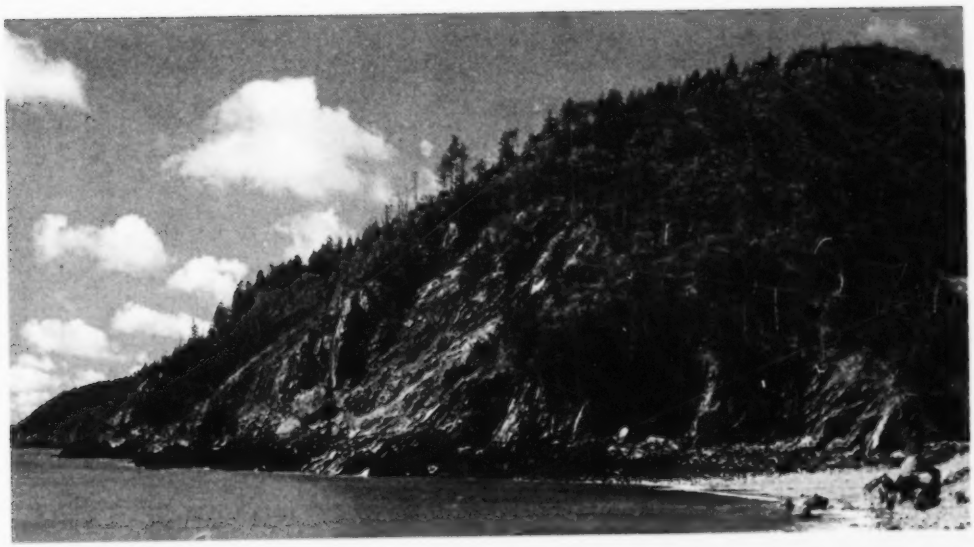
Legislation and regulations are applied by Parks Canada to protect park resources. The law enforcement program in the park also relies extensively on education and on communication of scientific information to complement more traditional regulatory approaches. These efforts are aimed at increasing public understanding and awareness of ecosystem values and of the ecological integrity mandate of Parks Canada.

The Law Enforcement Plan for Fundy National Park is currently under review, and the revised plan will be implemented during the life of this management plan. Resource Conservation will take the lead role in law enforcement related to resource protection. The RCMP is responsible for the maintenance of the peace within the park, and will work closely with Parks Canada to determine adequate levels of service.

Management Actions for Law Enforcement:

- Ensure that the *Canada National Parks Act* and Regulations, as well as other conservation laws, are enforced within Fundy National Park.
- Cooperate with other local or regional conservation agencies in the protection of park resources.
- Complete the review of the Fundy National Park Law Enforcement Plan and implement the revised plan.

6.0 The Park Zoning Plan And Wilderness Area Declaration



Coastal cliffs, Mile Brook. *Brian Townsend*

The Parks Canada zoning system is a resource-based policy tool used to allocate land use within national parks. Its intent is to ensure that adequate protection is provided for park ecosystems, by directing visitor use and facility development to areas of the park where they will have minimal impact.

During this management plan review, a number of small changes were made to the zoning plan to reflect measures taken to restore ecological integrity. The former Maple Grove Road has been closed to motor vehicles, and the old Zone IV corridor has been re-designated as a Zone II area, consistent with the surrounding land. The northern portion of the Laverty Road has also been closed and restored, and the former Zone IV area along this corridor has been designated as a Zone II wilderness, consistent with the surrounding designation. The area surrounding Wolfe Lake has been upgraded from a Zone III to a Zone II to reflect Parks Canada's intention to maintain this area in a wilderness condition. This Zone II area also provides a level of protection that is more consistent with the adjacent McManus Hill Ecological Reserve which has recently been designated by the Province of New Brunswick. Most of the former Zone III area around Bennett Lake has been upgraded to Zone II because no developments are planned for this area. Several additional minor changes were made to the zoning plan in order to facilitate the declaration of a wilderness area within Fundy National Park. The revised zoning plan for Fundy National Park is illustrated on Map 4.

The management plan review also resulted in a recommendation to declare a significant portion of Fundy National Park as a wilderness area under Section 14 of the *Canada National Parks Act*. The proposed boundaries for the declared wilderness area are illustrated on Map 5.

Brief descriptions of each zoning classification and the proposed declared wilderness area are provided below.

6.1 ZONE I - SPECIAL PRESERVATION

Zone I areas provide the highest level of protection offered by the Parks Canada zoning policy. They contain resources that are either unique, rare or sensitive to disturbance, or are considered to be the best examples of representative features of the natural region. Preservation is the key consideration of management, and therefore visitor use is not encouraged. Motorized access and circulation is prohibited. Special features may be interpreted off-site.

The following five Zone I areas are designated within Fundy National Park:

1. The Point Wolfe Coastal Cliffs contain one of two known New Brunswick sites of the bird's-eye primrose, a small herbaceous plant of northern affinity. This area is also one of the best potential nesting locations in the park for the peregrine falcon, a species-at-risk. The best examples of the inner Bay of Fundy soft rock (sandstone and conglomerate) coastal cliffs are also located in this Zone.
2. The Goose River Coastal Cliffs contain the second of two known New Brunswick sites of the bird's-eye primrose. Along this rugged, precipitous coast there are also potential peregrine falcon nesting sites.
3. Rossiter Brook Valley contains stands of rare old red spruce trees.
4. The Caribou Plain contains excellent examples of black spruce and raised-bog vegetation types, which are very rare in the park and surrounding region. These habitats are sensitive to visitor disturbance.
5. The Point Wolfe River Valley, its East Branch, and the lower part of Bennett Brook are the only locations in the park where the following rare flora are known to occur: slender spikemoss, squashberry, green spleenwort, a rare sedge species, and fir clubmoss. This area also contains some of the best examples of critical habitat for the endangered Atlantic salmon (inner Bay of Fundy), including some of the largest salmon pools on the Point Wolfe River.

6.2 ZONE II - WILDERNESS

More than 85% of Fundy National Park is designated as Zone II Wilderness. The Zone II designation is intended to encompass extensive areas which provide good representation of the natural region and will be maintained in a wilderness state. Perpetuation of native ecosystems and ecological processes, with minimal human disturbance, is the key management goal. Most of the major landforms and habitat types found in Fundy National Park are represented within the Zone II areas.

Within Zone II areas, park visitors will be able to experience solitude and undisturbed natural areas while participating in compatible forms of outdoor recreation such as hiking and backcountry camping. Travel within Zone II areas will be by non-motorized means only. Infrastructure is restricted to rudimentary facilities, such as hiking trails and backcountry campsites.

Backcountry camping, Goose River. *Brian Townsend*

6.3 ZONE III - NATURAL ENVIRONMENT

Zone III areas are managed as natural environments that are capable of sustaining a moderate level of visitor use, requiring only facilities of a rustic nature. Active resource management techniques may be used in Zone III areas either to sustain a species, to protect public safety, or to minimize problems associated with visitor use.

User opportunities in Zone III areas consist of dispersed recreational activities providing experiences consistent with resource protection and preservation, such as swimming, picnicking, hiking, non-motorized boating, skiing, and on-site interpretation.

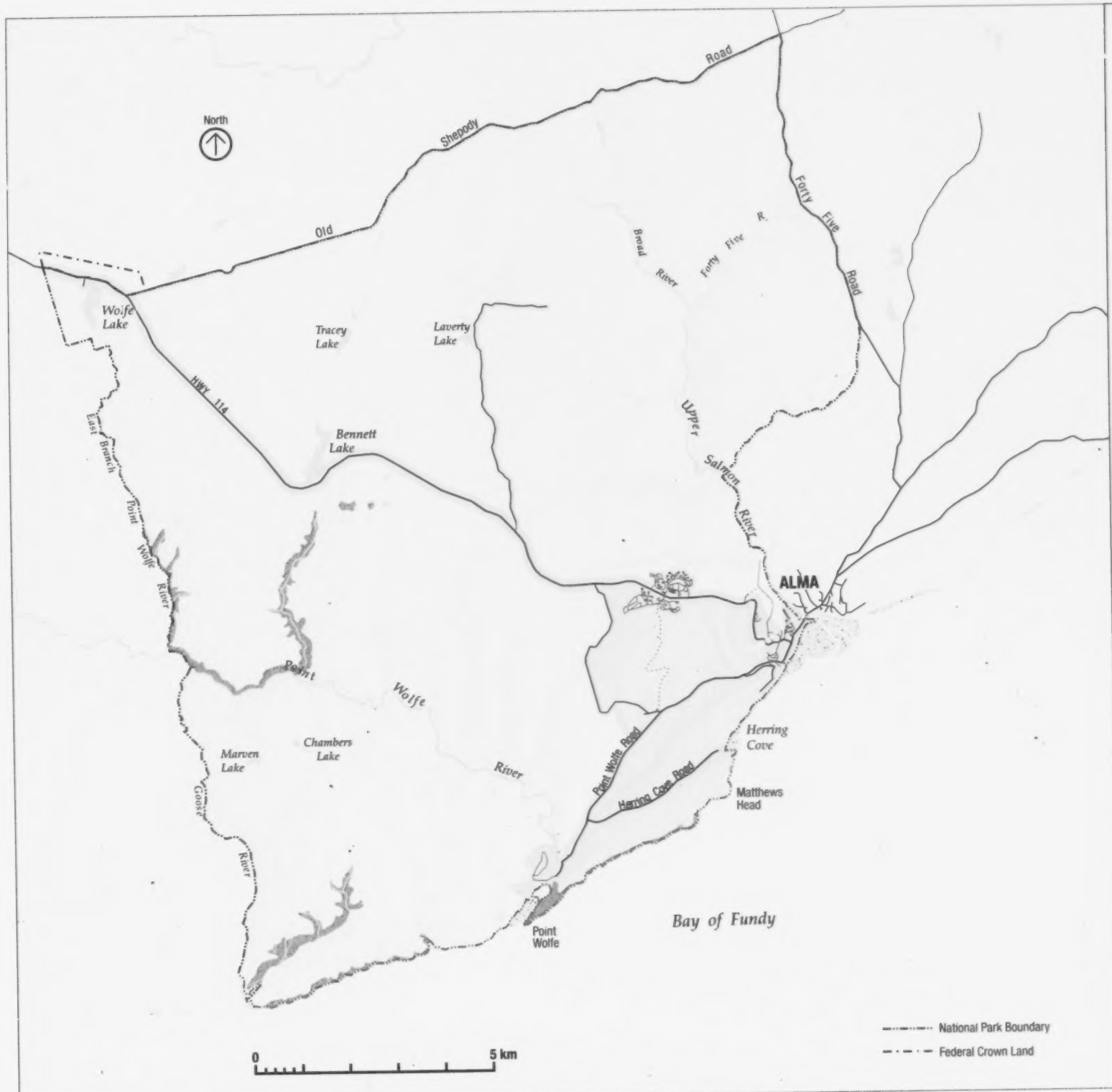
The Zone III areas in Fundy National Park include: a small area at Bennett Lake; the Point Wolfe to Matthews Head area; the land

MAP 4

FUNDY NATIONAL PARK OF CANADA

ZONING PLAN

- **Zone I**
  Special Preservation Areas
- **Zone II**
  Wilderness
- **Zone III**
  Natural Environment Areas
- **Zone IV**
  Outdoor Recreation Areas and Park Roads



MAP 5

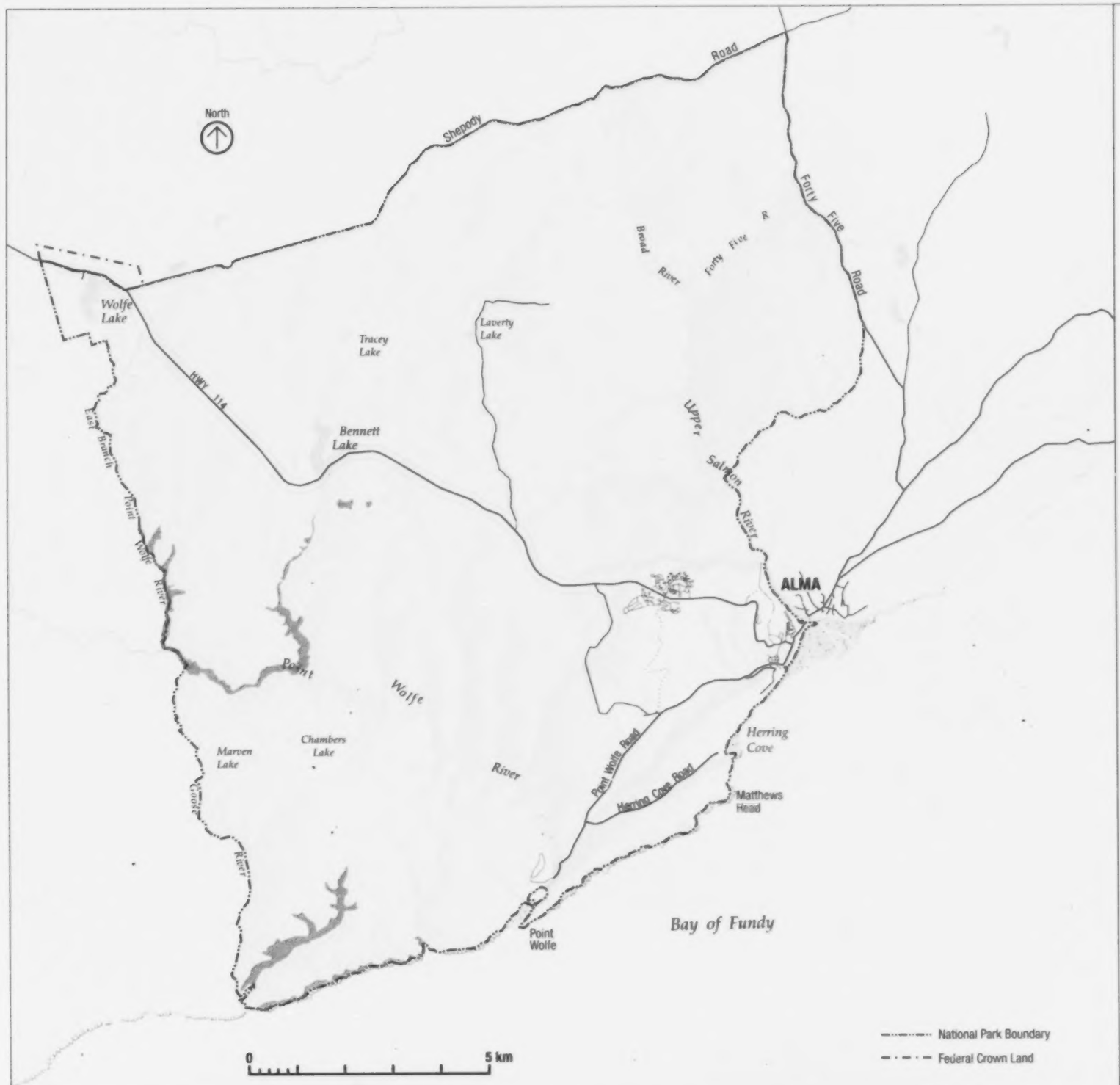
FUNDY NATIONAL PARK OF CANADA

PROPOSED WILDERNESS AREA

Zone I - Special Preservation Area

Zone II - Wilderness

The declared Wilderness Area includes both Zone I and Zone II areas as shown on this map.



NOTE: Boundaries of the Wilderness Area, as shown on the final administrative map, may differ slightly from those illustrated on this map.

Boat house at Bennett Lake day use area. *Brian Atkinson*

between the Herring Cove Road and Point Wolfe Road; and land bounded by the Point Wolfe Road, Hastings Road and Highway 114 (excluding the Zone IV designations).

6.4 ZONE IV - OUTDOOR RECREATION

The Zone IV designation encompasses areas that can support intensive visitor use and park facility development. Management efforts ensure high quality recreational experiences, while minimizing impacts on the natural and cultural resources of the park. Zone IV areas provide both day-use and overnight opportunities, requiring moderate to intensive facility development. Access and circulation in Zone IV areas may be by either motorized or non-motorized means.

The Zone IV areas in Fundy National Park encompass all of the areas that are directly accessible by motorized vehicles, including all of the park roads, campgrounds, day-use areas, the golf course, the swimming pool and park administration and maintenance facilities. Due to the nature of some of the visitor activities, such as golfing, picnicking and sightseeing, vegetation management activities may be conducted in order to maintain the desired visitor experience. To support ecological integrity objectives, landscaping activities in Zone IV areas will place a greater emphasis on utilizing native species and restoring natural habitats where feasible.

6.5 ENVIRONMENTALLY SENSITIVE SITES

Areas which are unique, rare, or especially vulnerable to disturbance, but which are too small to be considered for designation as a Zone I area, are classified as environmentally sensitive sites. These sites receive a high degree of protection through appropriate restrictions on visitor use and park development. Designation as an environmentally sensitive site ensures that the unique values of these sites are considered in future planning, research, and development activities. Low impact visitor use may be permitted within environmentally sensitive sites. Any such use will be carefully managed to ensure that it does not adversely affect the resources that the site is intended to protect. Heritage presentation programs may be used to raise public awareness of the existence and importance of environmentally sensitive sites in ways that do not identify their specific locations or otherwise threaten their resource values.

The environmentally sensitive sites are described in Appendix 2. The criteria used in identifying sites include:

- natural features, or habitat of species that are rare nationally, regionally, or locally;
- fragile ecosystem components that are sensitive to visitor use and/or development;
- habitat that is essential to a species for specific periods of its life cycle, such as denning, spawning, breeding and overwintering areas.

Fundy Golf Course. *Parks Canada*

6.6 WILDERNESS AREA DECLARATION

The declared wilderness area will provide a high level of legislated protection to most of Fundy National Park, while allowing the continuation of existing activities such as hiking

and backcountry camping. Within a declared wilderness area, the Minister may not authorize any activity that is likely to impair the wilderness character of the area. Activities may be authorized if they are required for the purposes of park administration, public safety, or the provision of rudimentary park facilities, including trails and backcountry campsites. Motorized access will not be permitted except for park administration and search and rescue purposes.

Most of the declared wilderness area boundaries are contiguous with existing surveyed boundaries of the park or with the Zone II area boundaries. Where boundaries are not contiguous with a surveyed park boundary they have been delineated to follow perceptible biophysical features or built structures (river, brook, shoreline, highway corridor, powerline). A buffer adjacent to roads and facilities is excluded from the wilderness area. Following the preparation of administrative map plans, the boundaries of the declared wilderness area will be formally established by a regulation issued under the *Canada National Parks Act*.

Management Actions for Zoning and Wilderness Area Declaration:

- Assess the research, protection, and management needs of all environmentally sensitive sites, and develop plans, guidelines, or other measures, to ensure their protection.
- Develop a database of environmentally sensitive sites.
- Continue to collaborate with officials of Natural Resources Canada in order to accurately describe the final boundaries of the wilderness area and prepare the administrative maps required for the regulation process.
- Communicate the role and benefits of the wilderness area to staff, neighbours of the park, and park visitors.

7.0 Cultural Resource Management

A cultural resource is a human work or a place which gives evidence of human activity or has spiritual or cultural meaning, and which has been determined to have historic value. (Parks Canada Guiding Principles and Operational Policies, 1994)

Parks Canada places a high priority on protecting and presenting cultural resources within national parks. Classification as a cultural resource signals Parks Canada's intent to respect, protect and present these heritage features.

Objects or features that are recognized as cultural resources must be managed in accordance with Parks Canada's Cultural Resource Management Policy. This policy establishes a holistic approach that integrates the protection and presentation of cultural resources into park management activities. The Cultural Resource Management Policy outlines a set of five core principles that guide the management of cultural resources. The principles of Value, Public Benefit, Understanding, Respect and Integrity must be considered in any decisions affecting cultural resources. Periodic monitoring and review is conducted to ensure cultural resource objectives are achieved.

Strategic Goal:

To manage, protect, and present the cultural resources of Fundy National Park so that the public understands and appreciates their significance and historic value.

7.1 CULTURAL RESOURCE INVENTORY AND EVALUATION

A comprehensive inventory and evaluation of the resources of Fundy National Park was undertaken in order to identify those which merit recognition as cultural resources, based on their historic value.

Covered bridge over the 45 River. *Todd Keith*

Resources identified as having cultural significance are classified as either Level I, or Level II cultural resources. Level I cultural resources are those that are directly related to the commemorative intent of a national historic site as determined by the Historic Sites and Monuments Board of Canada. There are presently no Level I cultural resources within Fundy National Park. Level II cultural resources are those that, although not deemed to be nationally significant, still possess important historic value.

The following criteria were used to evaluate potential Level II cultural resources in the park:

- provincial, territorial, or municipal designations;
- significant regional or local historic associations;
- historic, aesthetic or environmental qualities;

Old fields, Matthews Head. *J. M. MacFarlane*

- structures that are "classified" or "recognized" by the Federal Heritage Buildings Review Office;
- resources that reflect the historic evolution of the area; and,
- cultural landscapes, representing areas that have been modified, or given special cultural meaning by humans.

7.1.1 The Cultural Heritage of Fundy National Park

The Fundy area has a rich cultural history. Although there is no known physical evidence related to the use or occupation of the park area by Aboriginal people, it is thought that it falls within the traditional territory of both Mi'kmaq and Wolastokiyik (Maliseet) First Nations. Parks Canada will investigate the potential for oral history and documented research to elucidate the role that the park area may have played in the lives of Aboriginal people prior to and during European settlement of the region. This will include working with non-Native area residents, as well as members of the Mi'kmaq and Wolastokiyik First Nations.

Research has identified many cultural resources that are related to early European settlement and use of the area. The fifteen features and areas that have been designated as Level II cultural resources are listed in Appendix 3, and are illustrated on Map 6. These resources may be grouped into the following categories of historical features:

- Cultural resources associated with human settlement: these encompass such features as old farms or homesteads and associated features including foundations, old fields, stone fences, old roads, stone culverts, cemeteries, a cement church monument and archaeological artifacts.
- Cultural resources associated with resource harvesting: these include old saw mill sites, roll dams, driving dams or remnants of dams, the "Harry McManus" submerged canal, logging brows and lumber camps, an abandoned and partially filled copper mine with an old boiler, and associated pre-park cultural landscapes.
- Public works: these include one original Howe-truss covered bridge, circa 1914; one reconstructed replica Howe-truss covered bridge (1992) that is recognized for its form and function, and the associated dam and abutments of the original bridge; and lighthouse foundations.
- Federal Heritage Buildings: two buildings that are "recognized" by the Federal Heritage Buildings Review Office.

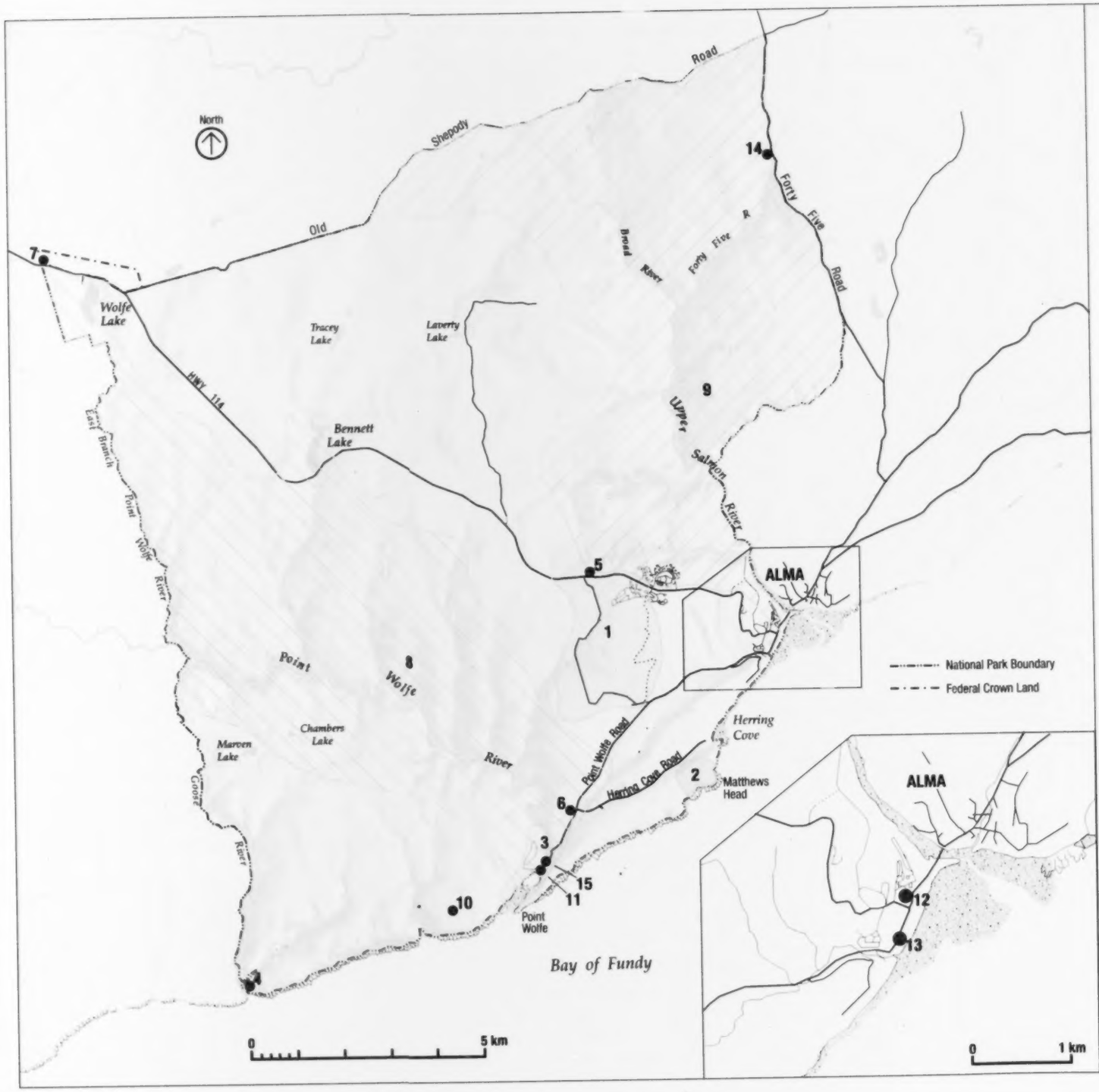
Parks Canada must ensure that these cultural resources are recognized, managed and presented so that the public will learn about and better appreciate the park's cultural heritage in ways that do not interfere with ecological processes and ecosystem management programs.

MAP 6

FUNDY NATIONAL PARK OF CANADA

LEVEL II CULTURAL RESOURCES

Historic Features, Below- and Above-Ground Resources, Landscapes and Facilities



RESOURCES ASSOCIATED WITH HUMAN SETTLEMENT

1. Butland and Hastings Settlements Cultural Landscape
2. Matthews Head Cultural Landscape
3. Point Wolfe Cultural Landscape
4. Goose River Cemetery
5. Hastings Cement Church Monument
6. Point Wolfe Cemetery
7. Wolfe Lake McManus Cemetery

RESOURCES ASSOCIATED WITH RESOURCE HARVESTING

8. Point Wolfe River Cultural Landscape
9. Upper Salmon River Cultural Landscape
10. Coppermine Trail
11. Point Wolfe Dam

PARK-ERA RESOURCES

12. Park Visitor Reception Building **
13. Superintendent's House **

** *Recognized* Federal Heritage Building

PUBLIC WORKS

14. Forty Five River Howe-Truss Covered Bridge
15. Point Wolfe Howe-Truss Covered Bridge (1992)
(*Form* and *function* only)

Cultural landscapes are geographical areas that have been modified, influenced and given special cultural meaning by humans (Parks Canada Guiding Principles and Operational Policies, 1994). The park's cultural landscapes provide evidence of traditional land use patterns associated with human settlement and exploitation of natural resources that existed prior to park establishment.

Cultural landscapes are evolutionary by nature. The park's cultural landscapes will continue to evolve under the influence of natural processes and ecosystem conservation activities.

7.1.2 Cultural Landscape Management

Cultural landscapes and other remnants of human settlement will not be maintained in their present state, but will continue to evolve under the influence of natural processes. Some landscape features, such as old fields or stone foundations, may eventually become obscured as ecosystem succession replaces former farmlands and homesteads with forest communities. Important features will be thoroughly recorded and documented. The cultural resources will be interpreted, and will find more permanent expression in exhibits, brochures, slides, and other media that are used in the Heritage Presentation Program.

7.1.3 Preserving Heritage Buildings

All buildings administered by the Federal Government that are 40 years old or older must be submitted to the Federal Heritage Buildings Review Office for evaluation of their historic significance. There are currently two buildings within Fundy National Park that are "recognized" as heritage buildings by the Federal Heritage Buildings Review Office: the Headquarters Area Visitor Reception Centre and the Park Superintendent's House.

Old logging dam, East Branch. *Todd Keith, 2003*

Visitor Centre building. *Barrett and MacKay*

Management Actions for Cultural Resource Management:

- Ensure that all cultural resource management activities carried out by Parks Canada or its partners adhere to the five principles of the cultural resource management policy.
- Conduct oral history and documented research into possible historical Aboriginal use of the park area.
- Develop and carry out a long-term monitoring program for cultural resources. Monitoring results will be presented in subsequent State of Protected Heritage Areas reports.
- Cultural resource management activities will be undertaken in recognition of the ecosystem conservation program aimed at restoring ecological integrity.
- Conduct historical and archaeological research and heritage recording to support heritage protection and presentation programs.
- Refer the Pool House and the Headquarters Area theatre to the Federal Heritage Buildings Review Office for evaluation.

8.0 Heritage Presentation And Communication Programs

Heritage presentation and public education programs strive to engage as many visitors as possible in meaningful and effective interpretation and education activities. These programs promote appreciation, understanding and enjoyment of the park's natural and cultural heritage, build awareness of Parks Canada's mandate, and encourage a sense of environmental stewardship. Through increased understanding, these programs build support for Canada's system of protected areas and Parks Canada's role as a steward of many national heritage places. The park communication program will be consistent with the direction outlined in Engaging Canadians: Parks Canada's Strategy for External Communications.

Strategic Goal:

To engage the public in heritage presentation and communication programs that contribute to memorable visitor experiences, foster an understanding of Parks Canada's mandate, promote an appreciation of the natural and cultural heritage values and national significance of Fundy National Park, and provide information that allows visitors to get the most out of their park experience.

This strategic goal will be achieved by delivering a range of programs to both on-site and off-site audiences, in three general program areas: external communications; orientation and information; and heritage presentation and public education.

8.1 EXTERNAL COMMUNICATIONS

The external communications program helps to achieve park goals by contributing to the delivery of key park management messages. The objectives of the communications program are: to foster public awareness of Fundy National Park, and of the opportunities to learn about its natural and cultural heritage; to promote compatible types and levels of park use based on national park values; and to encourage participation in educational and recreational activities within the park.

Communication activities will reflect Parks Canada's national external communications strategy, Engaging Canadians. This document assists in the preparation of suitable communication products that inform, influence and involve Canadians in support of the mandate of the Agency to protect and present places of national significance that are relevant to all Canadians. The New Brunswick South Field Unit is in the process of developing an Engaging Canadians Plan that includes specific communication strategies for Fundy National Park.

As noted in the Parks Canada Action Plan on ecological integrity:

"We will work with those who market and use national parks to ensure an understanding of the ecological integrity mandate so that we attract park visitors to the right place, at the right time, in the right numbers with the right expectations."

The marketing efforts of the park will focus on working with key Provincial and regional Destination Marketing Organizations. Parks Canada's ability to influence these large tourism marketing organizations is essential to our communication efforts as they relate to ecological integrity.

Within the region, the Atlantic Marketplace Committee has developed an Action Plan that identifies a series of priorities for implementing effective marketing strategies. These priorities, along with the national directions discussed above have been used to support the development of the 2000-2003 New Brunswick Marketing

Strategy and Action Plan. Guidance provided by the national marketing group will also be incorporated into the park's communications program.

We will also continue to develop and nurture relations with media outlets, in order to present park messages to the public.

Management Actions for External Communications:

- Focus communication products to influence visitor expectations and meet their interests, promote compatible park use and increase public understanding of the park's ecological integrity mandate.
- Work collaboratively with the media and with provincial and regional marketing organizations in order to influence the way the park is represented by others.
- Provide training opportunities to tourism industry representatives.
- Conduct periodic market research, visitor satisfaction surveys, and monitoring of visitor trends and expectations in order to evaluate effectiveness and assess visitors' awareness of key messages. These data will also be used for other park planning and management needs.
- Complete and implement the New Brunswick South Engaging Canadians Plan, and review it on a regular basis.

8.2 ORIENTATION AND INFORMATION

The Orientation and Information functions consist of personal and non-personal reception services designed to welcome visitors; provide information on park facilities, programs, and opportunities; and encourage participation in visitor activities within the park. The main point of delivery is at the Headquarters Area Visitor Reception Centre.

8.2.1 Providing Comprehensive Service at the Headquarters Area Visitor Reception Centre

The provision of a "Centre for Information and Interpretation in the Headquarters Area" was identified as a priority in the 1992 Management Plan. This project has not been implemented, due to other investment priorities.

The existing Visitor Reception Centre is not able to accommodate both reception/orientation services, and interpretation services. Consequently, Parks Canada has dedicated the existing building to visitor reception, information and orientation, so that adequate services may be provided to park visitors. As part of this effort, a new audio-visual presentation will be produced to present the main features of the park and encourage visitors to discover and experience the park.

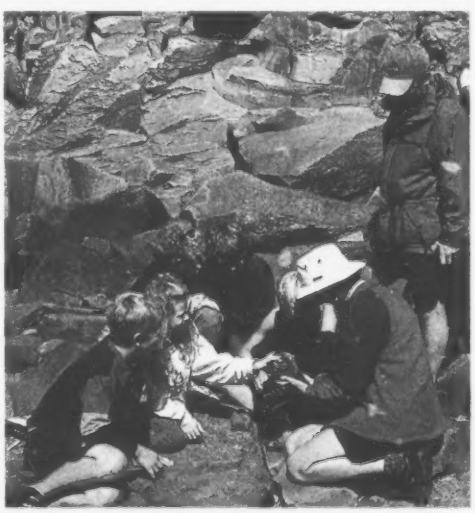
Management Actions for Orientation and Information Services:

- Promote memorable visitor experiences based on national park values throughout the year.
- Continue to work toward offering excellent, bilingual service to the public.

8.3 HERITAGE PRESENTATION AND EDUCATION

Effective heritage presentation and education programs help the public understand Parks Canada's mandate and the purpose and significance of national parks. These programs also encourage park visitors to learn about the park's natural and cultural heritage.

Heritage presentation programs consist of both personal guided services and non-personal approaches, using various media to communicate messages and values to visitors. Parks Canada's on-site efforts are complemented by outreach education programs aimed primarily at school groups.



Guided interpretive activity. *Jacques Pleau, 2002*

Visitors at an interpretive exhibit. *Barrett and MacKay*

Due to the lack of space in the existing Visitor Reception Centre, most of the interpretation components have been removed from the building and will be replaced by a series of updated, comprehensive self-guided interpretive nodes within the park (see section 8.3.2 below).

Over the life of this management plan Fundy National Park will develop new, innovative educational projects that will seek to improve people's understanding of ecological integrity in general, and the challenges of ecosystem management at Fundy National Park in particular. Key messages that focus on some of the park's main ecological integrity issues will be developed. These messages will incorporate the results of sound scientific research, and will help to demonstrate the important link between science and park management. Through these developments Parks Canada will strive to increase the involvement of park visitors and off-site audiences in learning opportunities. These programs will seek to instill a sense of environmental stewardship among participants, and to encourage Canadians to become more actively engaged in the protection, presentation, and enjoyment of their national parks and other protected heritage areas.

Revitalization of heritage presentation and education programs is a national objective of Parks Canada. Over the next five years, Fundy National Park will direct its efforts toward developing a more comprehensive range of high-quality professional interpretation and outreach programs and facilities that will support the creation of memorable visitor experiences.

8.3.1 Developing an Integrated, Professional Heritage Presentation and Public Education Program

Fundy National Park is in the process of renewing heritage presentation and public education programs, in order to:

- increase the level of awareness, understanding and appreciation of local and national messages and the mandate of Parks Canada;
- maximize the number of visitors that learn about Fundy National Park during the regular and shoulder season periods; and
- improve education programs across New Brunswick, thus increasing the effectiveness of the overall program.

In cooperation with partners, Parks Canada is addressing the above goals by enhancing the profile of heritage presentation and education to increase visitor participation in guided and self-directed learning programs.

8.3.2 Interpretation Themes, Learning Outcomes, and Target Audiences

The Interpretive Themes

Through this management plan review, a new interpretive concept has been developed that modernizes the park interpretive themes and

integrates national messages into the park's heritage presentation programs. The themes and messages will be delivered at key interpretive nodes that will be established at up to six locations throughout the park.

The four principal park themes provide the framework for communicating the park stories and interpretive messages. These four themes are:

1. Introduction to the Park: Fundy as an Island in a Sea of Change. This theme will explain the importance of Fundy as a protected area, in part by contrasting the park with the intensively utilized surrounding landscape.
2. Communicating a Sense of Place: Learning About the Fundy Ecosystem. This theme will present and describe the main biophysical characteristics of the park.
3. Discovering the Park's Story: The Human Influence on the Park. This theme includes a discussion of how historical land use has influenced the park's natural environment, how it has contributed to the social and cultural development of the region, and how the establishment of the national park has affected the community while providing new opportunities. The historical use of the region by Aboriginal people will also be discussed within this theme.
4. Gaining an Environmental Awareness: Conserving Fundy. This theme will describe critical ecological integrity issues for Fundy National Park and deliver messages about how individuals can become better stewards of Fundy and the global environment.

Interpretive nodes will be established in the Headquarters Area, at Point Wolfe, the Bennett Lake Day Use Area, the Wolfe Lake Day Use Area, and Herring Cove. Additional interpretive exhibits may be developed along the park trail system.

Within this thematic framework, the heritage presentation program will communicate a number of key messages related to ecological integrity, the national parks system, the natural and cultural heritage of the park, appropriate park uses, and environmental stewardship.

Visitors at an interpretive exhibit. *Brian Townsend, 2001*

Learning Outcomes

The learning outcomes are broad statements about what the participants in park interpretation or education activities should understand in terms of knowledge, awareness, and appreciation. Preliminary learning outcomes have been formulated, and will be finalized as part of the heritage presentation renewal program. The learning outcomes aim for visitors to understand:

- why Canadians should value natural areas and protected places;
- Fundy as an Island in a Sea of Change;
- the key ecological and cultural features protected in Fundy National Park;
- the measures that can be taken to help conserve the park ecosystem; and
- the importance of environmental stewardship.

Audiences

Heritage presentation and public education programs aim to reach park visitors and others who may not necessarily visit the park. The main target audiences within the park are:

- vacation travellers;
- local and regional recreational users;

- commercial tour groups;
- school-aged educational groups; and
- learning travel groups.

Off-site education efforts target these same groups, as well as local and regional stakeholders and groups or organizations with a specific interest in heritage protection or tourism.

Fundy National Park will conduct periodic visitor surveys of target audiences. These surveys will provide a basic measure of how effectively the heritage presentation program is achieving the desired learning outcomes.

Objective:
To improve public understanding of Parks Canada's mandate, and the role of Fundy in the national parks system.

Indicator:
- Visitor knowledge as measured by park surveys.

Target:
- By 2008, 70% of survey respondents will demonstrate comprehension of the mandate.
- By 2008, 70% of survey respondents will understand the role that Fundy fills in the national park system.

Management Actions for Heritage Presentation and Education:
- Strengthen the role of heritage presentation in the protection of ecosystems and cultural resources by presenting clear messages on ecological integrity and placing more emphasis on the park's cultural history.
- Conduct research to support heritage presentation programming and monitor the effectiveness of program delivery.
- Outreach education programs will seek to develop new partnerships and new communication tools that utilize available media and technologies.
- Provide enhanced training opportunities to heritage presentation staff involved in program design and delivery.
- Develop interpretive outlines, media concepts and detailed interpretation plans for the key interpretive nodes, using the updated interpretive themes as a framework.
- A number of projects proposed in the 1992 Park Management Plan will be modified or abandoned. These include:

1. "Provide interpretation of the settlement theme in the former Butland Settlement area, including exhibits and a short looped trail." The former Butland and Hasting settlements have been classified as cultural landscapes. Providing interpretation of these settlements remains a priority. Some improvements will be made at the Butland Lookoff, but no trails will be developed.
2. "Provide an Atlantic salmon observation and interpretation facility on the Point Wolfe River." Given the decline of the salmon population, this project has been abandoned. The story of the Atlantic salmon will be interpreted at the Point Wolfe interpretive node, in order to help raise awareness and increase support for species-at-risk and ecosystem conservation programs.
3. "Provide interpretation of the Acadian forest in the Bennett Lake and Laverty Road Trail Head areas explaining ecological principles, past and present forest management practices, etc." This project remains a priority and will be delivered at the Bennett Lake day use area, as part of the interpretive node development.

8.4 THE CO-OPERATING ASSOCIATION AND PARK VOLUNTEERS

The co-operating association for Fundy National Park is known as the Fundy Guild. The Guild operates the Fundy Bookstore, and re-invests earnings into the delivery of natural history events that support the park's heritage presentation program. The Fundy Guild coordinates the Young Naturalists program that is offered each summer. The Fundy Guild also helps to support the school outreach program offered by the park in the fall. The Fundy Guild will be encouraged to continue with its initiatives in the park.

Management Action for Cooperation and Volunteers:
- Continue to cooperate with the Fundy Guild in order to offer mutually beneficial programs and services to park visitors and others.

9.0 The Visitor Experience And Visitor Services

Since the approval of the last management plan, many park facilities have been upgraded to contemporary standards. The development phase is now complete in Fundy National Park, and park management is shifting toward an emphasis on maintaining ecological integrity and quality visitor services. Over the life of this plan, Parks Canada intends to explore opportunities to reduce the development footprint in the park. Park facilities and visitor use opportunities will be reviewed with input from park users and other key stakeholders to ensure that they offer a quality visitor experience. Some adjustments to the existing facilities and level of service may be implemented in order to renew park programs, respond to the park's ecological integrity emphasis, address visitor needs, and reflect the park's financial capacity.

Parks Canada will continue to invest in the maintenance of high-quality facilities for the benefit of park visitors and local residents. Visitors can participate in a range of outdoor recreational experiences, such as backcountry or frontcountry hiking and camping, ski touring, sea kayaking, swimming, picnicking, snowshoeing, and sightseeing. Recreational opportunities are dispersed throughout the different landscapes of the park, including the Bay of Fundy coastal zone, the river canyons and the upland plateau. Recreation and interpretation opportunities will continue to be provided at the six main visitor use areas of Wolfe Lake, Bennett Lake, Chignecto Campground area, the Headquarters Area, Point Wolfe, and Herring Cove. Other sections of the park will continue to be managed as backcountry wilderness. The visitor facilities and services offered within the park are illustrated on Map 7.

Strategic Goal:

To ensure Canadians and other park visitors have access to high quality recreational and educational opportunities, with services and facilities that are based on national park values, and that promote appreciation of the park's themes and the mandate of Parks Canada.

9.1 ACCESS AND CIRCULATION

9.1.1 The Park Road System

There are approximately 34 km of hard-surfaced roads and 38 km of gravel roads open to vehicular traffic in the park, excluding campground and facility access roads. Highway 114 provides the principal access to the park. Secondary paved roads traverse the southeastern section of the park, running from the Headquarters to Point Wolfe and Herring Cove. The current road system adequately supports park operations and provides appropriate opportunities for accessing, exploring and appreciating Fundy National Park.

Gravel roads include the Old Shepody Road and Forty Five Road that run along the northern and eastern boundary respectively, the Laverty Road, and the Hastings Trail. Since completion of the last management plan, the northern section of the Laverty Road, from the hiking trail access near the former fire tower site to the Old Shepody Road, has been closed and rehabilitated, thereby reducing habitat fragmentation in this sector of the park. The southern portion of this road will remain open to provide access to existing hiking trails. The former Maple Grove Auto Trail has also been closed to motorized traffic. The corridor has been maintained at the old road width, and is being used as a bicycle trail.

Driving on one of the park roads. *Parks Canada*

9.1.2 Maintaining Park Roads

Roads are a key component of the park's infrastructure, providing access to a variety of park facilities and visitor opportunities. Maintaining an adequate and safe road system continues to be a management priority. Over the years, however, it has become evident that the maintenance of some secondary roads requires the input of significant financial resources. These secondary roads do not contribute to meaningful visitor experiences, and so receive very limited use. It has also been recognized that the existing road network contributes to negative effects on the ecological integrity of the park. Mitigating these effects, reducing the financial burden of road maintenance, and restoring closed roads is a park management priority.

The highest priority for maintenance and recapitalization is Highway 114. Parks Canada remains committed to maintaining this highway in satisfactory condition in order to ensure safe and reliable access to the national park, as well as through-transit at the current level of service. Parks Canada will endeavour to manage this highway as an "ecological parkway". While public safety concerns will remain paramount, the road will be managed in such a way as to minimize negative road effects on adjacent ecosystems. Management measures will include the development and implementation of roadside vegetation management protocols using indigenous species such as ericaceous shrubs or low-growing conifers such as creeping juniper *(Juniperus horizontalis)*.

In the Headquarters Area, Highway 114 provides access to a number of park facilities, secondary roads, and the community of Alma. This area is also heavily used by pedestrians and tourist traffic. Improved lighting, signs, pedestrian crossings and vehicular intersections are planned to enhance public safety. Traffic in the Headquarters Area will be monitored to ensure that the road system meets visitor needs and public safety standards.

Funding constraints will challenge Parks Canada's ability to maintain the existing road system to acceptable standards. Reducing some secondary roadways in the park would alleviate some financial pressure, and create opportunities for enhancing ecological integrity, while promoting other visitor uses such as cycling and hiking. During the life of this plan, Parks Canada will conduct a comprehensive analysis of the management of secondary park roads, in relation to expenditures, visitor experience, public safety, and ecological integrity. Parks Canada will seek input from park users and other key stakeholders considering various road management options, including seasonal restrictions to access, change in type of use, and closure.

9.1.3 The Role of Public Transit

Currently, there are no public transit services available to park visitors. Over the life of this plan, Parks Canada will carry out a feasibility study on implementing a limited public transit system within the park. The study would include objectives to reduce traffic in busy areas, improve visitor flow and circulation, allow certain secondary roads to be maintained to a different standard, and promote public transportation and its inherent benefits.

Management Actions for Access and Circulation:

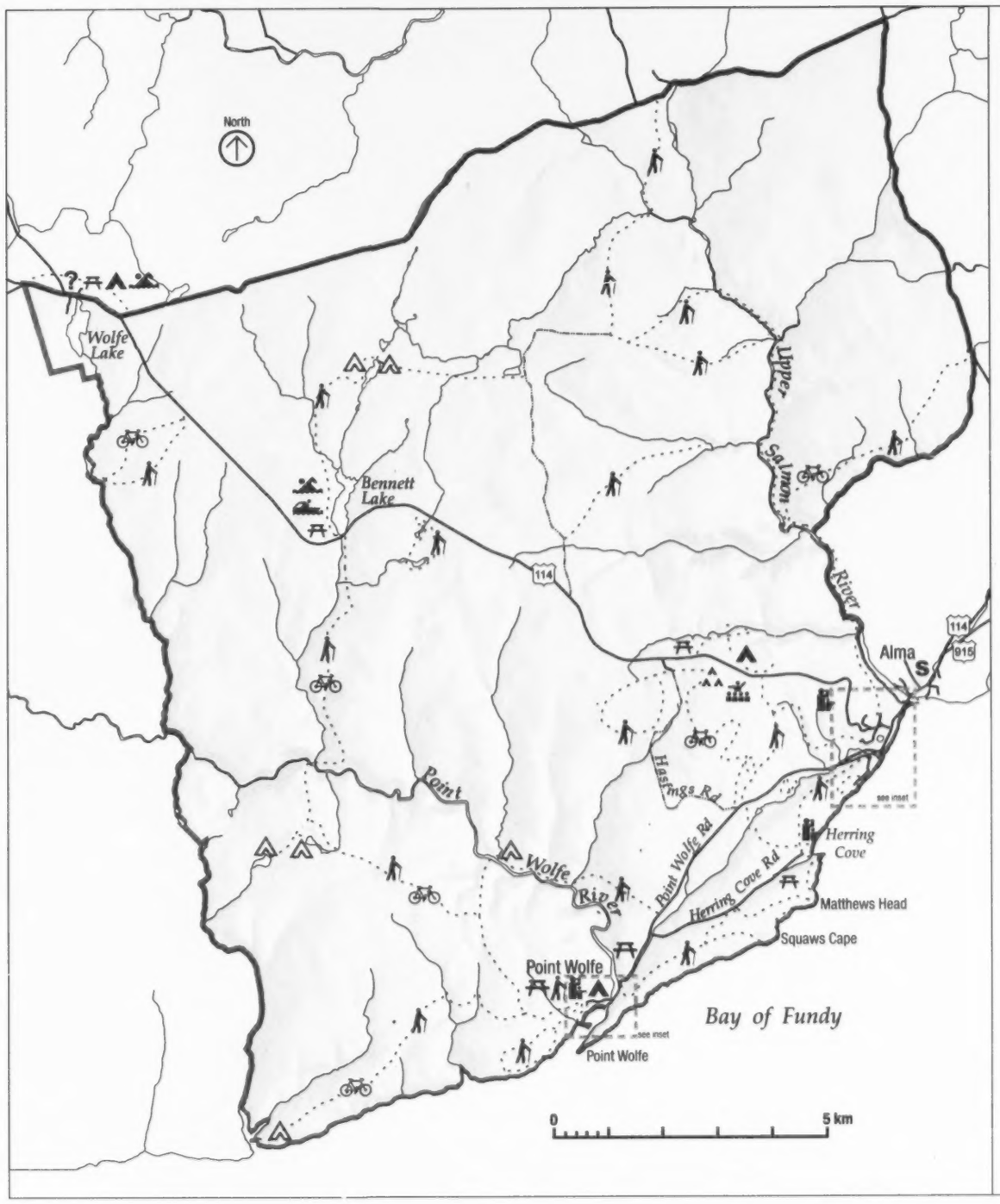
- Remove the access road to the former hostel, and restore the area to natural conditions.
- No new roads will be developed during the life of this management plan, with the possible exception of minor alterations required to improve safety in the Headquarters Area.
- Secondary and gravel roads will not be upgraded.
- Conduct an analysis and develop a secondary road management strategy in order to minimize the cost of maintain-

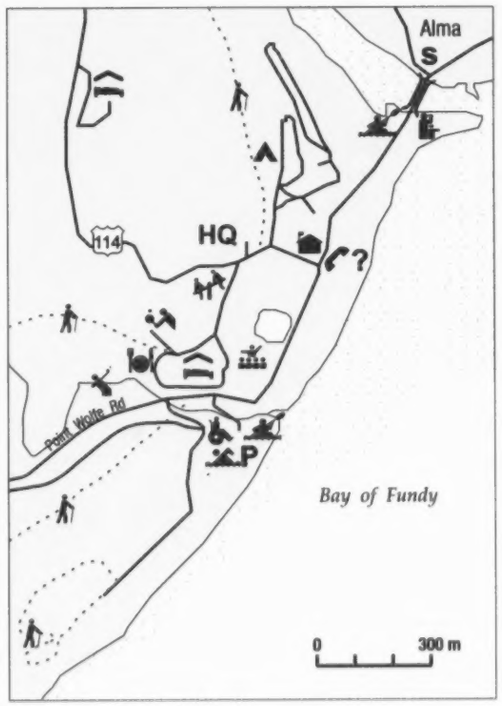
MAP 7

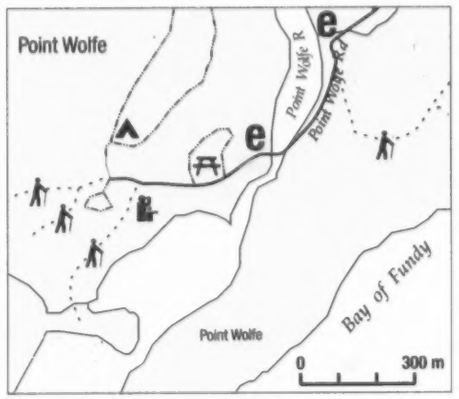
FUNDY NATIONAL PARK OF CANADA

VISITOR FACILITIES AND ACTIVITIES

- Reception Centre
- HQ — Park Headquarters
- ? — Information
- S — Commercial Services
- Golf
- Tennis
- Outdoor Theatre
- P — Pool
- Wheelchair Access
- Swimming
- Boating
- Look Off
- Picnic Area
- Playground
- Wilderness Camping
- Campground
- Group Campground
- Accommodation
- e — Exhibit
- Restaurant
- Kayak Launch Site
- Trail
- Biking
- Unpaved Road
- Paved Road







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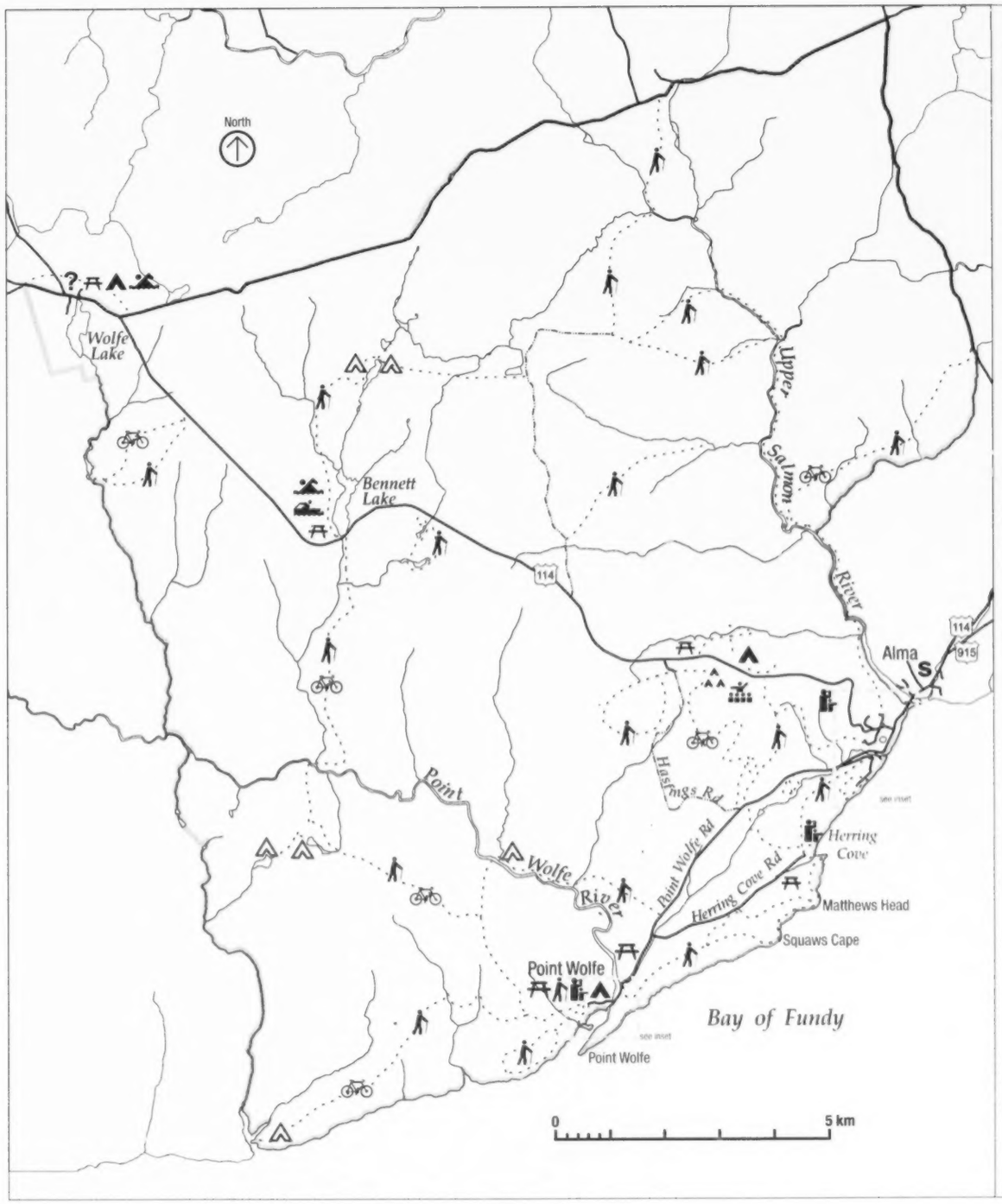
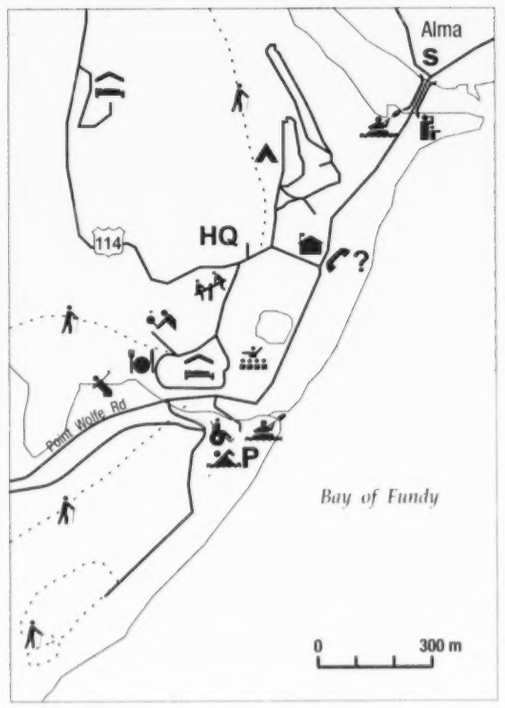
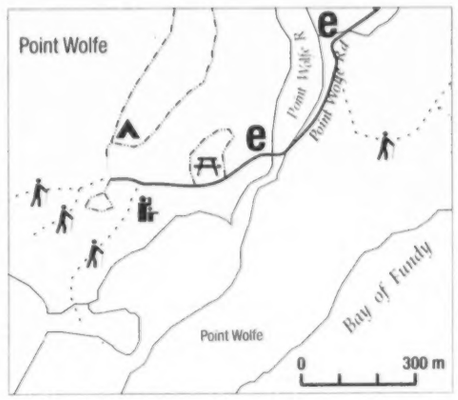






ing gravel roads, provide opportunities for appropriate visitor activities, ensure public safety, and improve ecological integrity of the park.

- Reduce the former Maple Grove Trail to a bicycle trail standard to reflect its current use.
- Work toward reducing the impacts of the presence and use of the park road system, with a focus on managing Highway 114 as an ecological parkway.
- Develop communication products to educate park users and the community on the additional maintenance costs generated by unauthorized uses of secondary and gravel roads when they are closed for the season.
- Undertake a feasibility study to examine the potential for establishing a limited public transit system within Fundy National Park.

Visitors in Fundy National Park are encouraged to participate in a variety of recreational opportunities, including walking and hiking, picnicking, photography, camping, swimming, canoeing, kayaking and boating, sightseeing, cycling, golfing, educational programs, self-guided and guided interpretive programs and special events, and winter activities such as cross-country skiing, snowshoeing, ice skating, and tobogganing.

9.2 PARK FACILITIES, SERVICES, AND APPROPRIATE PARK USE

Parks Canada will continue to offer a range of high-quality recreational opportunities that contribute to appreciation and understanding of the park's natural and cultural heritage, in a manner that does not impair the ecological integrity of the park.

9.2.1 Human Use Management

Fundy National Park is working continuously to provide memorable visitor experiences while ensuring that the potential impacts of visitor use on the park's ecological integrity are minimized. This initiative includes the collection of adequate information on visitor use interests, trends and potential impacts. These data will allow park managers to make better decisions in the effort to protect ecological integrity while meeting the needs and interests of park visitors.

Monitoring of visitor use and specific impacts will lead to the development of an integrated human use strategy that ensures visitor's needs are met while minimizing impacts on park ecosystems. Monitoring will also aid in State of the Park reporting, and contribute to the national monitoring program. This strategy will help "to attract visitor's to the right place, at the right time, in the right numbers and with the right expectations".

The *Parks Canada Guiding Principles and Operational Policies* (1994) state that "(as) new or modified forms of outdoor recreation emerge, each will be assessed for its appropriateness nationally before consideration in the park management planning process. Individual park management plans will then specify the types and ranges of both new and existing appropriate outdoor recreation activities and their supporting facilities."

9.2.2 Recreational Activities and Facilities in Fundy National Park

For the purposes of this Park Management Plan review, the following recreational activities are considered compatible with the management goals of Fundy National Park. Parks Canada will review, in greater detail, the appropriateness of each park visitor activity and prepare a report summarizing the results and recommendations as input to the next Park Management Plan review.

Bird watching in Fundy's forests. *Brian Townsend, 1999*

Hikers on the Goose River Trail. *Brian Townsend*

Walking and Hiking

The hiking trail system in Fundy National Park is now complete, providing a series of interconnected loops of varying degree of difficulty. During the life of this management plan, Parks Canada will invest in recapitalizing hiking trails that are in need of repair.

The natural setting of the park trail system provides visitors with opportunities to gain an intimate appreciation of the park's natural environments, and experience a sense of freedom, solitude and challenge in a variety of different habitats. The level of backcountry trail use has increased in recent years, and Parks Canada will carefully monitor future changes in use and potential ecological effects.

The 1992 management plan proposed the development of a new series of short trails in the vicinity of campgrounds and existing day-use areas, including loop trails around Bennett and Wolfe Lakes. This proposal has been re-assessed and will no longer be pursued. Some frontcountry trails have been upgraded, and existing opportunities are sufficient to offer a range of short trails that provide access to a variety of habitats, scenic viewpoints and self-guided interpretive facilities. In addition, the Devil's Half Acre trail will be closed following the closure and removal of the access road to the former hostel.

The backcountry trail system gives visitors opportunities to explore both the Bay of Fundy coastal landscape and the Caledonia Highlands. The park trail system is linked to two other regional trails beyond park boundaries: the Fundy Footpath Hiking Trail and the Dobson Trail. These trails will continue to support foot traffic entering the park from adjacent lands. Parks Canada is in discussion with the Province of New Brunswick and non-governmental organizations to improve the link between the park trail system and the Fundy Footpath. No additional trails will be developed across the boundaries of the park.

Camping

Camping is a popular, core activity at Fundy National Park. The park's facilities provide a variety of camping opportunities for both frontcountry and backcountry campers.

There are five frontcountry campgrounds in the park, with a total of 719 campsites. There is also one group campground, and 13 backcountry sites. The most popular campgrounds are Point Wolfe, Chignecto North and Headquarters. The Chignecto South campground has been reduced in size, and will be used only as an overflow facility when the other campgrounds reach capacity during the peak summer season. The Wolfe

Camping in one of the park campgrounds. *Brian Atkinson*

Lake campground is used the least, and the revenues generated do not cover the costs of maintenance. During the term of this management plan, Parks Canada will evaluate the need to maintain this campground. This evaluation will consider the proximity of the Chignecto campground, which has the capacity to accommodate additional visitors, and will include public consultation.

A number of improvements have been made to the park's campgrounds since completion of the previous management plan. A substantial upgrade was completed at the Chignecto North campground, which increased the capacity to accommodate large motor homes and trailers. The Point Wolfe campground was also redeveloped in the mid-1990s. Future efforts will focus on maintaining the quality of service presently offered at these sites. Campgrounds will not be expanded further, and no new campgrounds will be developed within the park.

The 13 backcountry campsites are found at four locations in the park: Foster Brook, Goose River, Tracey Lake, and Marven Lake. A backcountry site on the Upper Salmon river hiking trail has been closed due to its poor site design and the difficulty of enforcing a ban on campfires at this site. The existing sites are sufficient to meet the current demand for backcountry camping in the park.

The former MicMac group campground has been relocated to the old Chignecto South campground where water and electricity are available. This new site will continue to be available for use by organized, non-profit groups using the park for educational or recreational purposes.

Picnicking

Picnicking is a popular activity for day visitors and campers exploring the park. Developed picnic sites are located at numerous locations in the main visitor use areas of the park. Some of these picnic sites are not located in the most appropriate locations from a visitor experience perspective, resulting in limited use and increased maintenance costs.

A review of available picnic areas will be conducted, and picnic opportunities will be consolidated at the most appropriate and popular locations. Adequate facilities will be provided to ensure that some picnic areas are accessible to people with special needs.

Swimming

The most popular spot for swimming in Fundy National Park is the heated, outdoor salt-water swimming pool. Lifeguards are on duty at this facility throughout the summer season. Parks Canada will continue to offer this service during the visitor season. Changes to the level of service may be implemented to reflect the need to reduce operating costs.

Unsupervised freshwater swimming areas are located at Bennett and Wolfe Lakes.

Park Swimming Pool. *Jacques Pleau, 2002*

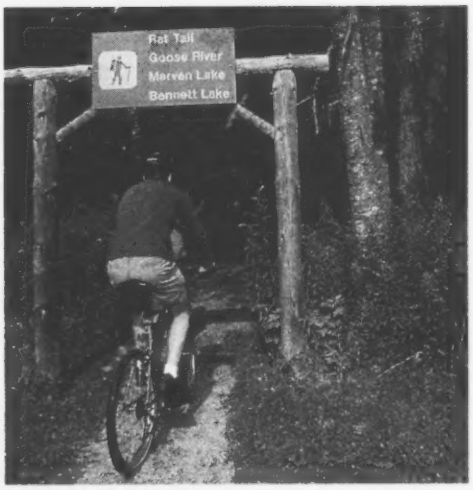
Cycling

Fundy National Park offers a variety of interesting and challenging cycling opportunities. The Point Wolfe Road and Herring Cove Road offer short- to medium-distance cycle touring opportunities.

The Shepody Road, Forty Five Road, Laverty Road, Hastings Trail, and Maple Grove Trail provide good opportunities for mountain biking. Mountain biking is also permitted on several park trails, allowing cyclists to experience a challenging ride in the park's backcountry. These trails were once old roads, thereby minimizing the potential environmental impact of this activity.

Canoeing, Boating and Kayaking

Freshwater paddling opportunities are available at the Bennett Lake day use area, where there is a boat rental facility. Boating has been discontinued on Wolfe Lake, in order to minimize disturbance to nesting common loons.



Cycling on the Goose River Trail. *Brian Atkinson*

The dramatic Bay of Fundy coastline provides opportunities for sea kayaking adjacent to the park. Kayaks can be launched from a location adjacent to the Alma park entrance gate, or from the swimming pool area. Suitable landing locations exist within the park at Point Wolfe River, Herring Cove, and Goose River.

Golfing

Golfing has been available at Fundy National Park since 1949. The 9-hole golf course, located in the Headquarters Area, provides a unique experience for golfers. Although this activity does not require a national park setting, it has historically been an important component of the park experience.

Consistent with Parks Canada policy, the Fundy golf course will not be expanded beyond its current size, due to a recognition of the negative impact such facilities have on the ecological integrity of the park. The existing course will be maintained in accordance with Audubon standards, thus minimizing its impact on the park environment. Parks Canada will restore the golf course segment of Dickson Brook, while ensuring that this does not affect the playability of the course.

Tennis and Lawnbowling

Tennis courts are available in the Headquarters Area, near the golf course clubhouse. Although tennis is an activity that does not require a national park setting, it is an historical activity at Fundy. This activity will continue, while the facility remains in good condition, pending the outcome of a review of appropriate visitor activities.

Lawnbowling is another historical activity that is enjoyed by a variety of visitors, including family groups and seniors. Like tennis, this activity does not require a national park setting, and its continuation will be subject to the outcome of the appropriate activities review exercise.

At the time these facilities require capital re-investment, Parks Canada will re-evaluate them to determine whether further expenditures should be allocated to these activities.

Cross-country Skiing and Other Winter Use

There are approximately 35 km of groomed cross-country ski trails in Fundy National Park. Numerous other opportunities exist for skiers who prefer backcountry touring on ungroomed terrain. Several trails are also designated for snowshoeing. Most visitors participating in winter recreational activities come from the local community, or the

Sea kayaking along the Fundy coast. *Parks Canada*

Cross country skiing. *Brian Townsend, 2001*

Maritime region, and the level of interest is influenced mainly by the snow conditions, which vary seasonally and from year to year. Parks Canada will continue to provide groomed trails for cross-country skiing, but the level of service may be adjusted to reflect visitor use levels and funding priorities.

Controlled snowmobile use will continue to be limited to the Forty-Five and Shepody Roads along the boundary of the park.

Objective:
To provide a high-quality visitor experience based on national park values that generates a high level of satisfaction among park users.

Indicator:
- Visitor satisfaction as measured by periodic surveys.

Target:
- By 2008, 85% of visitors will be fully satisfied with the experience offered by Fundy National Park.

9.2.3 Public Safety

Fundy National Park completed a comprehensive Visitor Risk Management Plan in 1999. This plan is an essential tool that will help safeguard the welfare of park visitors and protect them from unusual dangers. Based on a risk analysis, it describes park objectives, as well as levels of service for each of the public safety components of prevention, readiness and response. Communication is an important aspect of the public safety program that helps to ensure that visitors are provided with appropriate information to plan a safe trip. The components of the Visitor Risk Management Plan are in various stages of implementation, and the plan is scheduled for a full review in 2006.

Fundy National Park will continue to cooperate with the RCMP on matters related to the maintenance of peace.

9.2.4 Commercial Services

Roofed Accommodation
Within the boundaries of Fundy National Park, roofed accommodations are available at two locations. The Fundy Highlands Inn and Chalets has 20 motel rooms and 24 chalets available. The Fundy Park Chalets has 29 chalets. These establishments will continue to meet the demand for roofed accommodation in the park.

Food Services
Restaurant and canteen services are located in the former golf clubhouse adjacent to the golf course. These services will continue to be provided in the Headquarters Area. No additional commercial food services will be established within the park.

Private Sector Development
The Park Policy on Private Sector Development outlined in the 1992 Management Plan has been rescinded. The existing commercial services within the park now meet park objectives. Parks Canada will continue to encourage appropriate future tourist developments in local communities.

Management Actions for Park Facilities, Services, and Appropriate Park Use:
- Review the appropriateness of each park visitor activity, and prepare a report summarizing the results prior to the next review of the Park Management Plan.
- Study the level, type and geographic distribution of human uses, the presence, scale and configuration of support facilities, along with their respective and cumulative impacts, and use the results to develop a Human Use Management Strategy that ensures visitor needs are met while minimizing impacts on ecological integrity.

- Ensure that key visitor services and facilities are accessible to persons with disabilities.
- Promote ecologically sustainable tourism through cooperation with other government agencies, interested groups, and individuals in the tourism industry.
- Close the Devil's Half Acre trail and restore the site to an early successional stage.
- Evaluate the future of Wolfe Lake campground.
- Adjust the size and level of service at Chignecto South Campground to reflect lower occupancy rates and its use as an overflow facility only. Rehabilitate closed sites.
- Plan and implement improvements at the Butland Lookoff to provide a quality visitor experience and improve safety at the existing site. New interpretation panels and cautionary signage will be installed as required.
- Widely scattered picnic facilities will be consolidated at several strategic locations in the park.
- Promote mountain biking opportunities on the gravel roads within the park.
- Provide basic facilities and information for sea kayakers at the Alma and pool house launching locations, and increase promotion of this activity.
- Invest in the recapitalization of hiking trails in need of repair. No new trails will be developed in the park.
- Implement the park Visitor Risk Management Plan, and conduct a full review of the plan in 2006.
- Assess any capital redevelopment of facilities, accommodations and infrastructure, belonging to either Parks Canada or commercial operators, in light of the *Parks Canada Guiding Principles and Operational Policies* (1994) and the guidelines contained in the Parks Canada Action Plan on Ecological Integrity.
- Review the Long-Term Capital Infrastructure Plan on an annual basis to reflect progress and operational needs.

10.0 Administration And Operations

Fundy National Park is administered under the provisions of the *Canada National Parks Act* and Regulations, the *Parks Canada Agency Act* (1998), and in accordance with the *Parks Canada Guiding Principles and Operational Policies* (1994). As a federal government asset, Fundy National Park must also adhere to additional federal legislation and policy, including the Treasury Board Guidelines, the *Financial Administration Act* (1985), and the *Public Service Employment Act* (2003).

Park operations at Fundy National Park are focussed on providing for appropriate use of public heritage resources, in an effective and efficient manner, while recognizing that the primary consideration of park management is the protection of ecological integrity. The demonstration of sound environmental stewardship, and the efficient use of limited financial resources, are top priorities in the administration and operation of the park.

Over the life of this management plan, Parks Canada will continue to seek cost-effective means of carrying out park operations. The socioeconomic effect of various administrative arrangements on the local and regional communities will continue to be a consideration in decision making. Parks Canada will continue to provide sustainable employment for the staff of Fundy National Park.

Parks Canada will seek opportunities for partnerships, where potential efficiencies may exist, with the local community, the Province of New Brunswick, and other agencies, such as the Atlantic Canada Opportunities Agency and Public Works Canada.

Timely and appropriate maintenance will help to ensure that park assets are maintained to acceptable standards and that facilities remain serviceable over the full span of their economic life. Park structures, facilities, grounds and roadways will be operated and maintained so as to comply with established safety and health standards, and in a manner that promotes environmental stewardship and meets the approved Facility Appearance Guidelines for Fundy National Park.

Strategic Goal:

To operate Fundy National Park in an efficient, fiscally responsible manner that demonstrates sound environmental stewardship, in order to achieve Parks Canada program objectives.

10.1 ADMINISTRATION AND OPERATION FACILITIES

10.1.1 Staff Accommodation

A national policy on staff housing is currently being formulated, and the future of accommodations in Fundy National Park will reflect the direction of this policy. An assessment of future accommodation needs in the park will be conducted. Any future accommodation needs that may be identified will continue to be addressed outside of the park.

The park bunkhouse, located adjacent to the maintenance compound, will be maintained for the use of seasonal staff and researchers. By providing affordable accommodation, this facility permits the park to attract quality, seasonal staff from the region outside of the park.

10.1.2 Staff Offices

Staff offices at Fundy National Park are divided between the Administration building, the second floor of the Visitor Reception Centre, and the Stores building in the Maintenance Compound. Some of this office space is insufficient to meet the needs of staff. Over the life of this plan, Parks Canada will examine options for improving the office space in the park, in order to provide a satisfactory work environment, improve

efficiency, and reduce energy consumption, greenhouse gas emissions, and operating costs.

All management functions for park operations, including administration, general works, visitor services, resource conservation, and heritage presentation, will continue to be based in the park Headquarters/Alma area for the foreseeable future.

10.1.3 Maintenance Facilities

The present location of the maintenance compound is efficient for park operations. However, maintenance functions within the compound are scattered, some facilities and pieces of equipment are outdated or in need of repair, and there are concerns regarding health and safety requirements and effects on ecological integrity. The maintenance compound will be upgraded at its present location in order to address these concerns.

A small parcel of federal Crown land on the Forty Five Road that has been used for park maintenance purposes in the past is no longer required for park purposes and will be disposed of.

Management Actions for Administration and Operation Facilities:

- Conduct a needs assessment for staff accommodation in the park.
- Review the office space requirements of park staff.
- Upgrade the existing maintenance compound.
- Declare the small maintenance property on the Forty Five Road as surplus, and dispose of it accordingly.

10.2 PROMOTING ENVIRONMENTAL STEWARDSHIP WITH PARK OPERATIONS

The New Brunswick South Field Unit has developed an Environmental Management System Action Plan to reduce the environmental impact of Parks Canada operations. Fundy National Park will continue to implement this action plan over the life of this management plan.

Fundy National Park will promote environmental stewardship by integrating the use of sound environmental practices and technologies into park operations. Parks Canada will demonstrate leadership by exploring opportunities to integrate renewable energy technologies into existing park facilities, improving the environmental performance of park campgrounds, and using appropriate native vegetation around park facilities and road rights-of-way. Potential opportunities include the use of solar hot water heating to reduce energy consumption at the heated swimming pool, and the installation of small-scale wind turbines to provide a percentage of the energy needs at park campgrounds.

The environmental performance of existing park buildings can also be improved through design modifications and installation of infrastructure that improves efficiency. Over the course of this plan, Fundy National Park will review programs and partnerships, such as the Federal Building Initiative of Natural Resources Canada, which may assist in implementing technologies to reduce energy consumption and greenhouse gas emissions. Opportunities to reduce greenhouse gas emissions through fleet management will also be explored.

Objective:

Reduce the ecological footprint of park operations, and demonstrate leadership by implementing a progressive environmental management plan.

Indicators:

- Compliance with landfill wet/dry solid waste separation.
- Greenhouse Gas emissions (tonnes of carbon dioxide)
- Water consumption (litres)
- Audubon certification of golf course

Targets:

- By 2008, the park will improve its compliance with the solid waste wet/dry separation system from 60% to 75%.
- By 2007, Fundy National Park will meet its greenhouse gas reduction target of 5.2% by decreasing energy consumption (i.e. measured in kilojoules of electricity), implementing alternate energy systems, and converting vehicles to hybrid and alternate fuel systems.

- By 2007, the park will reduce overall water consumption (including campgrounds and other visitor facilities) by 15% relative to the 2003 base year.
- By 2009, the golf course will receive Audubon certification.

Management Actions for Promoting Environmental Stewardship With Park Operations:

- Develop additional educational material for park visitors aimed at increasing com pliance with the wet/dry waste separation system.
- Explore potential programs and partnerships aimed at reducing energy consumption and greenhouse gas emissions.
- Water and electrical meters will be added to more park facilities, in order to improve the ability to measure and reduce water and energy consumption.
- Explore, where feasible, opportunities to construct demonstration projects related to the use of renewable energy technologies.
- Conduct environmental screenings of all development proposals within the park, in accordance with the *Canadian Environmental Assessment Act* (1992) and other federal policies.

11.0 Environmental Assessment Summary

Parks Canada is responsible for assessing and mitigating the impact of its actions on ecosystems and cultural resources. The "Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals" prepared by the Canadian Environmental Assessment Agency, requires an environmental assessment of all plans and policies submitted to the federal Cabinet or to a Minister for approval, including management plans for national parks.

Accordingly, a strategic environmental assessment of the goals, programs, guidelines and projects outlined in this management plan was carried out. The objectives of the environmental assessment were:

- to ensure that the strategic directions, objectives, and specific proposals contained within the plan respect and support the ecological integrity goals and objectives for the national park;
- to ensure that the plan adequately addresses the multiple stressors and major concerns relating to the cumulative effects that are affecting park ecosystems;
- to assess the implications of proposals included in the plan to ensure that they enhance positive environmental effects, and avoid or mitigate potential negative effects; and
- to identify the implications of any potential trade-offs of ecosystem values against proposed human use enhancements for presentation to decision makers.

The assessment included evaluation of cumulative environmental effects from all proposals. It also considered the full range of potential impacts on the natural and cultural resources of the park, both from ongoing operations and from proposed projects.

Relevant federal environmental policies, including those of Parks Canada, were considered in a policy review. The proposed strategic directions outlined in the management plan are consistent with these policies. Implementation of the management direction and the specific actions that are proposed should result in progress towards greater ecological integrity for Fundy National Park.

The environmental challenges facing Fundy National Park are recognized in the direction and initiatives outlined in the plan. Opportunities for public review during the planning process were provided in 1999. Public views and comments, including environmental concerns, are reflected in the plan.

The plan proposes several management actions that could result in some adverse environmental impact. However, it is expected that these impacts can be mitigated once they are examined more closely during project-specific environmental assessments.

A strategic environmental assessment will be conducted on the following plan:

- The Field Unit Communications Plan (Engaging Canadians Strategy)

The following initiatives will be subject to project-specific environmental assessments:

- Ecosystem Restoration projects
- Baseline Ecological Inventories
- Recapitalization of Highway 114
- Changes to Butland Lookoff
- Ecological Integrity Monitoring Program
- Ecosystem Research programs
- Development of new interpretive facilities at various nodes
- Removal of the former hostel and access road, and subsequent ecological restoration

Several changes were made to the plan as a result of the strategic environmental assessment. These changes were designed to mitigate potential impacts and clarify specific guidelines. They include:

- The cultural resource management direction, particularly the management of cultural landscapes, was clarified. The intent is to ensure that this program is consistent with park efforts aimed at improving the ecological integrity of the park.
- The marketing direction was re-examined, to ensure that it promotes Parks Canada objectives regarding ecological integrity, visitor experience and appropriate park use.

With these measures, the strategic direction and the specific actions in the implementation strategy outlined in the management plan are not likely to have any significant adverse environmental impact. If the strategic direction is followed and the specific actions are carried out fully, the park management program will contribute to an improvement in the ecological integrity of Fundy National Park.

List Of Contributors

Many people contributed to the preparation of this management plan for Fundy National Park. They included interested members of the general public, park staff, local residents, non governmental organizations, and other partners. They are all deserving of recognition for their participation in and contribution to the planning process and to this management plan.

A multi-disciplinary planning team prepared the management plan. The following members of the core team demonstrated professionalism and a sustained commit-- ment throughout the project: Anne Bardou, Manager, National Historic Sites and Cultural Resources, New Brunswick South; Edouard Daigle, Chief of Resource Conservation, Fundy National Park; Dave Garden, Asset Manager, New Brunswick South; Ed Jager, former External Relations Manager, New Brunswick South; Paul Perkison, Manager, Client Services and Heritage Presentation, Fundy National Park; Rhonda Rossiter, Manager, Business and Executive Services, New Brunswick South; and Renee Wissink, Park Ecologist, Fundy National Park.

Pamela Gautreau, former Manager, External Relations, and Vickie Sahanatien, former Park Ecologist, also made valuable contributions to the planning process. Jackie Olsen, former Field Unit Superintendent, offered expertise and guidance throughout the first stages of the project. Thierry Bouin, Field Unit Superintendent, New Brunswick South participated extensively and offered judicious direction in the final key phases of the management planning process.

Resource people from a range of professional areas provided advice, guidance and support during the project. From Fundy National Park, Thane Watts, Operations Supervisor, Resource Conservation, and Alain Cassie, Conservation Biologist, made important contributions. From the Atlantic Service Centre, Harry Beach, Environmental Coordinator; Bruce Rickett, Interpretation Specialist; Judith Tulloch, Historian; and Alana Rodgers and Tim Daly, cartographers, provided significant professional services to the process. Colleagues and managers at the Parks Canada National Office also offered valuable comments. The design and production of this plan was carried out by Guy LeBlanc, Graphic Designer, Atlantic Service Centre.

The project required considerable work, research, collection of background information, issue analyses, interdisciplinary discussions and reviews. For both of us, coordinating this team of dedicated colleagues has been an enjoyable and enriching experience.

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APPENDIX 1

Summary Of Planned Actions

The park management plan provides long-term direction for the operation and management of Fundy National Park. It provides the framework for more detailed project planning and implementation that will be carried out as part of the field unit business planning process. Implementation of the planned actions is the responsibility of the field unit, and is dependent on the availability of sufficient financial resources.

The following summary of planned actions consists of a series of projects and programs identified in this management plan. These actions will be translated into specific annual work plans that will be identified in the New Brunswick South Field Unit Business Plan. An annual management plan implementation report will be prepared to track progress on achieving stated goals and management actions. These reports will provide input to the State of the Park Report that will be prepared in 2009, and the next formal management plan review, scheduled for 2010.

2006-2011 PLANNED ACTIONS

Performance Indicators

- Prior to the next management plan review, Parks Canada will engage in the development of a more comprehensive set of vision and performance indicators with the active participation of a multi-stakeholder working group

Maintaining and Restoring Ecological Integrity

- Continue to promote, support and participate in the Greater Fundy Ecosystem Research Group and a comprehensive scientific research program addressing biodiversity and multi-scale sustainable land management issues.
- Explore the feasibility of establishing an Aboriginal advisory group to act as a liaison between First Nations and Parks Canada regarding park management, heritage and culture, and other opportunities in the national park and historic sites within the field unit.
- Work with partners to maintain and enhance ecosystem monitoring activities in the Greater Fundy Ecosystem and encourage periodic reporting on the state of the greater ecosystem.
- Work toward broader landscape conservation in the region by supporting initiatives to establish additional protected areas in the region and encouraging research and development of connectivity corridors in the Atlantic Maritime Ecozone.
- Initiate biological inventories to improve understanding of fungi, mosses, lichens and liverworts, as well as soil and aquatic invertebrates.
- Continue to participate in the recovery program for endangered Inner Bay of Fundy salmon, including ecosystem level research (e.g., stable isotope food web analysis), gene banking, captive rearing and breeding, and reintroduction of various life stages.
- Complete a landscape change analysis, in partnership with the Greater Fundy Ecosystem Research Group and the Fundy Model Forest.
- Complete the gazetting process for the 100-hectare parcel of land at the west entrance of the park.
- Complete the development of population viability analyses for selected indicator species.
- Develop an invasive species assessment and action plan coupled with climate change modelling.

- Continue ecosystem succession research on the role of defoliating insects and fire (e.g. ecosystem archaeology)
- Prepare a fire management plan, based on fire history research, specifying the conditions under which forest fires will be allowed to burn without intervention.
- Develop an ecosystem monitoring program that will evaluate progress toward achieving the stated targets.
- Implement the restoration plan for the golf course segment of Dickson Brook.
- Develop and implement a restoration plan for the former hostel site and access road.
- Implement additional restoration projects as resources permit. Priority projects include the restoration of the Caribou Plain bog and restoration projects related to the recovery of Inner Bay of Fundy Atlantic salmon populations.
- Ensure that the *Canada National Parks Act* and Regulations, as well as other conservation laws, are enforced within Fundy National Park.
- Cooperate with other local or regional conservation agencies in the protection of park resources.
- Complete the review of the Fundy National Park Law Enforcement Plan and implement the revised plan.

Park Zoning and Wilderness Area Declaration

- Assess the research, protection, and management needs of all environmentally sensitive sites, and develop plans, guidelines or other measures to ensure their protection.
- Develop a database of environmentally sensitive sites.
- Continue to collaborate with officials of Natural Resources Canada in order to accurately describe the final boundaries of the wilderness area and prepare the administrative maps required for the regulation process.
- Communicate the role and benefits of the wilderness area to staff, neighbours of the park, and park visitors.

Cultural Resource Management

- Ensure that all cultural resource management activities carried out by Parks Canada or its partners adhere to the five principles of the cultural resource management policy.
- Conduct oral history and documented research into possible historical Aboriginal use of the park area.
- Develop and carry out a long-term monitoring program for cultural resources. Monitoring results will be presented in subsequent State of Protected Heritage Areas reports.
- Cultural resource management activities will not interfere with the ecosystem conservation program or with actions aimed at restoring ecological integrity in the park.
- Conduct historical and archaeological research and heritage recording to support heritage protection and presentation programs.
- Refer the Pool House and the Headquarters Area theatre to the Federal Heritage Buildings Review Office for evaluation.

Heritage Presentation and Communication Programs

- Focus communication products on promoting appropriate park use and increasing public understanding of the park's ecological integrity mandate so that visitors arrive with the right expectations.
- Work collaboratively with the media and with provincial and regional marketing organizations in order to influence the way the park is represented by others.
- Provide training opportunities to tourism industry representatives.
- Conduct periodic market research, visitor satisfaction surveys, and monitoring of visitor trends and expectations in order to evaluate effectiveness and assess visitors' awareness of key messages. These data will also be used for ecosystem conservation, human use management, heritage presentation and visitor services planning and management.
- Complete and implement the New Brunswick South Engaging Canadians Plan, and review it on a regular basis.

- Promote appropriate activities and appropriate levels of park use throughout the year.
- Continue to work toward offering excellent bilingual service to the public.
- Strengthen the role of heritage presentation in the protection of ecosystems and cultural resources by presenting clear messages on ecological integrity and placing more emphasis on the park's cultural history.
- Conduct research to support heritage presentation programming and monitor the effectiveness of program delivery.
- Outreach education programs will seek to develop new partnerships and new communication tools that utilize available media and technologies.
- Provide enhanced training opportunities to heritage presentation staff involved in program design and delivery.
- Develop interpretive outlines, media concepts and detailed interpretation plans for the key interpretive nodes, using the updated interpretive themes as a framework.
- A number of projects proposed in the 1992 Park Management Plan will be modified or abandoned. These include:

  1. "Provide interpretation of the settlement theme in the former Butland Settlement area, including exhibits and a short looped trail." The former Butland and Hasting settlements have been classified as cultural landscapes. Providing interpretation of these settlements remains a priority. Some improvements will be made at the Butland Lookoff, but no trails will be developed.
  2. "Provide an Atlantic salmon observation and interpretation facility on the Point Wolfe River." Given the decline of the salmon population, this project has been abandoned. The story of the Atlantic salmon will be interpreted at the Point Wolfe interpretive node, in order to help raise awareness and increase support for species-at-risk and ecosystem conservation programs.
  3. "Provide interpretation of the Acadian forest in the Bennett Lake and Laverty Road Trail Head areas explaining ecological principles, past and present forest management practices, etc." This project remains a priority and will be delivered at the Bennett Lake day use area, as part of the interpretive node development.

- Continue to cooperate with the Fundy Guild in order to offer mutually beneficial programs and services to park visitors and others.

The Visitor Experience and Visitor Services

- Remove the access road to the former hostel, and restore the area to natural conditions.
- No new roads will be developed during the life of this management plan, with the possible exception of minor alterations required to support changes to park infrastructure in the Headquarters Area.
- Secondary and gravel roads will not be upgraded.
- Conduct an analysis and develop a secondary road management strategy in order to minimize the cost of maintaining gravel roads, provide opportunities for appropriate visitor activities, ensure public safety, and improve ecological integrity of the park.
- Reduce the former Maple Grove Trail to a bicycle trail standard to reflect its current use.
- Work toward reducing the impacts of the presence and use of the park road system, with a focus on managing Highway 114 as an ecological parkway.
- Develop communication products to educate park users and the community on the additional maintenance costs generated by unauthorized uses of secondary and gravel roads when they are closed for the season.
- Undertake a feasibility study to examine the potential for establishing a limited public transit system within Fundy National Park.

- Review the appropriateness of each park visitor activity, and prepare a report summarizing the results prior to the next review of the Park Management Plan.
- Study the level, type and geographic distribution of human uses, the presence, scale and configuration of support facilities, along with their respective and cumulative impacts, and use the results to develop a Human Use Management Strategy that ensures visitor needs are met while minimizing impacts on ecological integrity.
- Ensure that key visitor services and facilities are accessible to persons with disabilities.
- Promote ecologically sustainable tourism through cooperation with other government agencies, interested groups, and individuals in the tourism industry.
- Close the Devil's Half Acre trail and restore the site to an early successional stage.
- Evaluate the future of Wolfe Lake campground.
- Adjust the size and level of service at Chignecto South Campground to reflect lower occupancy rates and its use as an overflow facility only. Closed sites will be rehabilitated.
- Plan and implement improvements at the Butland Lookoff to provide a quality visitor experience and improve safety at the existing site. New interpretation panels and cautionary signage will be installed as required.
- Widely scattered picnic facilities will be consolidated at several strategic locations in the park.
- Promote mountain biking opportunities on the gravel roads within the park.
- Provide basic facilities and information for sea kayakers at the Alma and pool house launching locations, and increase promotion of this activity.
- Invest in the recapitalization of trails in need of repair. No new trails will be developed in the park.
- Implement the park Visitor Risk Management Plan, and conduct a full review of the plan in 2006.
- Assess any capital redevelopment of facilities, accommodations and infrastructure, belonging to either Parks Canada or commercial operators, in light of the Parks Canada Guiding Principles and Operational Policies and the guidelines contained in the Parks Canada Action Plan on Ecological Integrity.
- Review the Long-Term Capital Infrastructure Plan on an annual basis to reflect progress and operational needs.

Administration and Operations

- Conduct a needs assessment for staff accommodation in the park.
- Review the office space requirements of park staff.
- Upgrade the existing maintenance compound.
- Declare the small maintenance property on the Forty Five Road as surplus, and dispose of it accordingly.
- Develop additional educational material for park visitors aimed at increasing compliance with the wet/dry waste separation system.
- Explore potential programs and partnerships aimed at reducing energy consumption and greenhouse gas emissions.
- Water and electrical meters will be added to more park facilities, in order to improve the ability to measure and reduce water and energy consumption.
- Explore, where feasible, opportunities to construct demonstration projects related to the use of renewable energy technologies.
- Conduct environmental screenings of all development proposals within the park, in accordance with the *Canadian Environmental Assessment Act* and other federal policies.

APPENDIX 2

Revised List Of Environmentally Sensitive Sites

1. Salamander Habitat

Hemidactylium scutatum (four-toed salamander)
In New Brunswick, this species is known from only one confirmed site in Fundy National Park. A park-wide survey in 1999 has confirmed its presence at only one location in the park, although potential habitats also exist at several other locations.

Ambystoma laterale (blue-spotted salamander)
With a patchy distribution in southern New Brunswick, this species is known from only one location in Fundy National Park.

Desmognathus fuscus (dusky salamander)
Fundy National Park is the only national park in Canada in which this species is present, and it is found at only one location within the park.

2. Rare Bryophytes (mosses and liverworts)

Cyrtomnium hymenophylloides
A significant bryophyte species in the Gulf of St. Lawrence region. It is an example of an arctic-alpine species, requiring specific habitat conditions. It is found at four locations in Fundy National Park, two of which are protected within Zone I areas. A third site is designated as an environmentally sensitive site because it is vulnerable due to its easily accessible location.

Hygrophynum montanum
A significant bryophyte species, infrequent in the Gulf of St. Lawrence region, and known from only one location in New Brunswick, found in Fundy National Park in 1968.

Radula tenax
Growing on a humid shaded cliff, the discovery of this liverwort species in Fundy National Park represents the only record in Canada.

Tetrodontium brownianum
A boreal species of moss with a disjunct distribution in North America, it is found in three sites in the park where it is highly habitat specific.

Tortella humilis
A moss species considered rare in the Gulf of St. Lawrence region, which is at its northern limit in the park.

3. Rare Vascular Plant Species

Habernaria hyperborea (leafy green orchid)
This species is rare in the park, where it is found in only a few locations.

Sanguisorba canadensis (Canada burnet)
This plant is rare in New Brunswick and in the park, where it is found at only two locations.

4. Atlantic Salmon Pools and Spawning Habitat

Salmo salar (Atlantic salmon)
The inner Bay of Fundy Atlantic salmon population has been designated as endangered by COSEWIC as of May 2001. In the park, two rivers contain potentially critical habitat for this species.

5. Rare Salt Marsh Habitat

Salt marsh vegetation communities are rare in the park. The only habitat in the park for Mummichogs *(Fundulus heteroclitus)* and ninespine sticklebacks *(Pungitius pungitius)*, is found in one of these salt marsh estuaries.

6. Frost Pocket Heathland

Plant associations and climatic conditions found in this frost pocket heathland are unique in the park, and are representative of flora usually found in more northerly climates.

SITES DELETED FROM THE LIST

The following sites were identified as environmentally sensitive sites and resources in the 1992 Park Management Plan, but have been deleted from the current list.

1. **Beaver Pond Wetlands:**
   Do not harbour any rare elements.
2. **Meadow Lake Bog:**
   Does not harbour any rare elements.
3. **Mile Brook:**
   Red spruce already protected in Rossiter Brook Zone I area.
4. **Coastal Area:**
   White-tailed Deer Wintering Area: Does not harbour any rare elements. Deer are not a rare or sensitive species, and this wintering area is no longer critical to their habitat needs.
5. **Coastal Area:**
   Winter Denning: Does not harbour any rare elements.
6. **River flood plains:**
   Rare elements, if any, not identified or confirmed.

APPENDIX 3

List Of Park Cultural Resources

A. Resources Associated with Human Settlement

1. Butland and Hasting Settlements Cultural Landscape
This cultural landscape encompasses a large number of historical features including foundations, old fields, stone fences and old roads.

2. Matthews Head Cultural Landscape
This landscape encompasses many resources such as an old farm site, four to six foundations, stone culverts, old fields and apple trees.

3. Point Wolfe Cultural Landscape
This landscape encompasses the areas formerly occupied by the village, shipbuilding facilities on the shoreline, clearly visible remnants of a large logging dam below the covered bridge, and the East Branch log driving dam.

4. Goose River Cemetery
This cemetery contains only two or three graves. Its exact location is unknown.

5. Hastings Cement Church Monument

6. Point Wolfe Cemetery

7. Wolfe Lake McManus Cemetery

B. Resources Associated with Resource Harvesting

8. Point Wolfe River Cultural Landscape
This landscape consists of the watershed and vegetation communities that were affected by 19th- and early 20th-century logging activities and the presence and use of logging dams, logging brows and mill sites.

9. Upper Salmon River Cultural Landscape
This landscape consists of the watershed and vegetation communities that were affected by 19th- and early 20th-century logging activities and the presence and use of logging dams, logging brows and mill sites.

10. Coppermine Trail Mine
This cultural resource includes an abandoned and partially filled copper mine and an old boiler.

11. Point Wolfe Dam
This cultural resource consists of major remnants of the former wood logging dam located below the covered bridge.

C. Park-era Resources

12. Park Visitor Reception Building
This building is "recognized" by the Federal Heritage Buildings Review Office.

13. Superintendent's House
This building is "recognized" by the Federal Heritage Buildings Review Office.

D. Public Works

14. Forty Five River Howe-Truss Covered Bridge
This bridge, built in 1914, is the only remaining original covered bridge in the park.

15. Point Wolfe (1992) Howe-Truss Covered Bridge
The form and function only of this 1992 Howe-truss covered bridge are of historic significance.